

**POPULATION GROWTH AND LITERACY - EXPERIENCE OF SRI LANKA, COMPARED WITH DEVELOPED COUNTRIES**

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**Introduction**

This article reviews the relationship between literacy and fertility as experienced by Sri Lanka prior to 1987\*, and compares it with the experiences of developed economies and other developing countries.

The population of Sri Lanka increased from 2,400,380 in 1871, to 16.3m in 1987. Thus during the last 116 years there has been a sevenfold increase in the population. During the last two or three decades unemployment has also increased and at present the total figure is over one million.

The rate of natural increase which was 1.9 per cent in 1975, increased to 2.2 per cent in 1980, and by 1987 it had declined to 1.6 per cent per annum.

The average rate of natural increase of 1.9 per cent for the period 1980-87 (Table 1), even though comparable with other developing countries, is a relatively high growth rate compared with developed countries. Despite the declining trend in population growth, the annual additions have remained in the region of 200,000 - 250,000. If this rate of growth is to continue, the country's population will grow to twice its present size in approximately 40 years.<sup>1</sup> According to the World Development Report 1987, the increase rate is projected at 1.6 per cent between 1985 and 2000.

The literacy rate, which was 78.5 per cent in 1971, increased to 90 per cent towards the end of the 80s, while the average population increase rate during this period was around 1.8 per cent. Thus though there was a declining trend in population growth with increasing literacy, which is consistent with trends in other developing countries, when Sri Lanka is compared with developed countries the magnitude of the effect of literacy on population growth has not been as much as one would have expected. In this study I have examined some of the probable factors for this anomaly.

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\*Since 1987 there has been a steady decline in population growth. During the mid 1980's, a significant section of the youth of the country, sought to wrest political power by force, violence and terrorism bringing the nation to the brink of anarchy. Thus during this crisis period which destroyed the value of human life there was social instability, fear and insecurity among the people. It would be interesting to examine whether this "war culture" which destroyed the basic values of society had any impact on marriages and child-bearing, thus causing a decline in birth rates for the period which followed. This would warrant a separate comprehensive study. This paper specifically relates to the period prior to 1987.

TABLE 1

Year	Birth Rate (Per 1000)	Death Rate	Increase Rate
1975	27.8	8.5	19.3
1976	27.8	7.8	20.9
1977	27.9	7.4	20.5
1978	28.5	6.6	21.9
1979	28.9	6.5	22.4
1980	28.4	6.2	22.2
1981	28.2	5.9	22.3
1982	26.9	6.1	20.8
1983	26.3	6.2	20.1
1984	24.8	6.5	18.3
1985	24.3	6.2	18.1
1986	22.3	6.0	16.3
1987	21.9	5.9	16.0
1988	20.7	5.8	14.9

Source: *Statistical Pocket Book, Dept. of Census and Statistics, 1989, Sri Lanka.*

### Fertility

Fertility relates to the increase in population through births. The commonly used indicator of fertility is the crude birth rate, which is the number of live births per year per 1000 population. The crude birth rate declined from 30.4 per 1000 in 1971 to 27.5 in 1974, and was followed by an increase until 1981. Since 1981 there has been a decline as shown below.

Year	Crude Birth Rate (per 1000)
1981	28.2
1984	24.8
1985	24.3
1986	22.3
1987	21.9
1988	20.7

Source: *Dept., of Census and Statistics, Sri Lanka.*

A more refined measure is the total fertility rate, which is the average number of children born alive to a woman during her lifetime. The total fertility rate, which was 5.3 in 1953 declined to 3.3 by 1981. Since 1974, the total fertility rate had declined only by 0.2. Thus during recent times the decline in fertility has been moderate and the total fertility is still above three children per woman.

However, even though the positive effect of literacy on fertility during the last three decades was not as much as that experienced by developed countries, it had some impact on the growth of the population. According to the Department of Census and Statistics, if there had been no change in fertility rates since 1953, the total population of Sri Lanka in 1981 would have been 18.2 million, which is 3.4 million above the actual figure (2).

In the Sixties, some studies examined fertility trends. In 1966, Jayewardene and Selvaratnam attributed the decline in fertility to an increase in age at marriage (3). Prakasam, in a study in 1968, concluded that the decline in fertility during 1953-63 was due to changes in the age structure and the marital status of women (15-19 years). In 1972, Fernando observed that the most significant contributing factor for the decline of fertility was a change in the proportion of those who were marrying (4).

The Sri Lanka Contraceptive Prevalence Survey clearly shows a decline in the marital fertility rate during 1960-75. According to the survey, during this period almost 66 per cent of women who were married used contraceptives. In 1966, the government supported and participated directly in family planning programmes. In the first half of the 1980s, the government offered financial incentives for the use of modern methods of contraception (5).

Migration was another factor which had an impact on population growth. In 1981, about 85 per cent of migrants were between 20 and 40 years of age, and 52.5 per cent of all migrants to the Middle-East were females. In 1981, 57,447 migrated and this was about 19 per cent of the natural increase, in that year. During the period 1971-80, had it not been for a heavy out-migration amounting to 14.9 per cent of natural increase, the growth rate of the country would have been of the order of about 2.2 per cent rather than the observed 1.7 (6).

With increasing literacy, though there was a general decline in fertility, supporting the correlation between literacy and fertility, the average rate of natural increase\* in the 1980's was around 1.8 per cent (Table 1). This is high compared to the experience of developed countries. Therefore the effect of literacy, family planning, migration etc., on population growth was mitigated because of other relevant factors existing in traditional economies, discussed elsewhere in this article.

### **Literacy**

In the 1981 census, of the 11,309,485 persons aged 10 years or more, 9,865,507 were reported literate. This represents a 87.2 per cent literacy rate compared with 78.5 per cent in 1971. In 1981, literacy rates for men and women were 91.1 per cent and 83.2 per cent respectively, compared with 85.6 per cent and 70.9 per cent in 1971. Thus it seems that the gap between the male and female literacy rate had narrowed.

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\* The net addition to the population resulting from excess of births over deaths is referred to as natural increase.

At the beginning of this century, less than one in ten women could read and write. By 1981, approximately eight out of every ten were literate. Among men, the literacy rate increased from 80.7 per cent in 1953 to 91.1 per cent in 1981. Female literacy continued to rise rapidly and during 1971-1981 it had increased by 12.3 per cent, while male literacy increased by 5.5 per cent.

The literacy rates of the two major communities Sinhala and Tamil are more or less equal.

In 1981, 89.3 per cent of the population were literate in Sinhala, while the figures for Sri Lankan Tamils, Indian Tamils, Muslims, Malays and Burghers were 87.3 per cent, 68.0 per cent, 79.3 per cent, 91.5 per cent and 97.5 per cent. The Burghers and the Malays who form only 0.6 per cent of the population live mainly in the urban areas and have the highest rate of literacy.

TABLE 2

Literacy Rates of Persons Aged 10 Years and over by age Group and Sex, 1971 & 1981

Age group	Literacy rate per 100						Percent increase		
	1971			1981			1971 - 1981		
	Both sexes	Male	Female	Both sexes	Male	Female	Both	Male	Female
10 - 14	83.0	83.7	82.3	89.8	90.0	89.6	8.2	7.5	8.9
15 - 19	86.7	88.3	85.1	90.4	90.8	90.0	4.3	2.8	5.8
20 - 24	87.1	91.0	83.1	91.7	93.1	90.4	5.3	2.3	8.8
25 - 29	84.7	91.0	78.3	92.2	94.2	90.2	8.9	3.5	15.2
30 - 34	82.4	90.4	73.8	91.2	94.4	87.9	10.7	4.4	19.1
35 - 39	74.5	86.3	62.5	88.2	93.3	83.1	18.4	8.1	33.0
40 - 44	74.9	86.7	61.3	85.3	92.2	77.9	13.9	6.3	27.0
45 - 49	70.1	84.0	54.4	80.8	89.8	71.5	15.3	6.9	31.4
50 - 54	68.7	83.3	51.3	80.4	89.8	70.0	17.0	7.8	36.5
55 - 59	63.9	79.1	45.3	77.9	88.5	66.2	21.9	11.9	46.1
60 - 64	60.5	75.6	41.0	75.9	86.7	63.2	25.5	14.7	54.1
65 - 69	57.3	73.5	37.5	72.8	84.5	59.8	27.1	15.0	59.5
70 - 74	53.2	69.9	31.8	70.6	82.9	56.3	32.7	18.6	77.0
75 & over	42.9	60.8	23.8	65.6	78.8	51.1	52.9	29.6	115.0

Source : Census of Population and Housing 1981, General Report, Vol. 3, p. 133.

Table 2 depicts the variation in literacy with age for 1971 and 1981. Figures for both years show that among the young in the early to late teens, literacy had increased with age.

In 1981, the highest literacy levels (90 per cent) among women were found in the age group 15-29 years. In 1971, the highest literacy rate which was 85.1 per cent, was among women in the age group 15-19 years.

Among men in the age group 25-29 years, the highest literacy rate was 94.2 per cent, while the figure for 1971 was 91 per cent. Thus when compared with other developing countries the increase in literacy rate in Sri Lanka has been unprecedented.

Out of 30 poorest countries listed by the World Bank, based on per capita Gross National Product in 1980, the literacy rate of Sri Lanka was the highest. By 1980, in most developed countries, adult literacy rates were in the range of 99 per cent to 100 per cent, whereas in developing countries the literacy rate varied from a low of 10 per cent to 87 per cent (Table 3).

TABLE 3

	Adult literacy	Birth rate	Death rate	Increase rate
	1980	1980	1980	1980
Mali	10	5.2	2.4	2.8
Pakistan	24	4.4	1.6	2.8
Bangladesh	26	4.6	2.0	2.6
India	36	3.6	1.5	2.1
Burma	67	3.9	1.4	2.5
Sri Lanka <sup>1</sup>	87	2.8	0.7	2.1
U.K.	99	1.3	1.2	0.1
U.S.A.	99	1.6	0.9	0.7
W.Germany	99	1.0	1.2	0.2
N.Zealand	99	1.7	0.8	0.9
France	99	1.4	1.0	0.4
Australia <sup>2</sup>	100	1.6	0.7	0.9

1. By 1991, in Sri Lanka the literacy rate had reached 91 per cent.

2. Does not include the indigenous population in Australia.

Source: Computed from Population Reference Bureau, 1980 World Population Data Sheet, Washington D.C., World Bank Atlas, 1981, and Census Report 1981, Sri Lanka.

When Sri Lanka is compared with other developing countries, the correlation between literacy rate and population growth has not been simple and straightforward as with developed countries. For example in the early eighties, Bangladesh, India and Pakistan had low literacy rates (26 per cent, 36 per cent and 24 per cent) with high birth rates (4.6, 3.6 and 4.4 per cent). In contrast to this, we had Burma, which had a literacy rate of 67 per cent and a birth rate of 3.9 per cent, which was higher than that of India. Therefore, in developing countries while there was a positive effect relating to the linkage between literacy and population growth there have been factors other than literacy such as high percentage of the workforce engaged in peasant subsistence agriculture compared with developed countries, socio-economic background, traditional social system, increasing unemployment of educated men and women etc., which have influenced population growth.

Furthermore, most men and women in developing countries marry at an earlier age than in developed countries. In the former, additional or marginal children are considered as economic investments because of the income from child labour on the farm or due to support for parents in old age. Thus children are an asset or are considered a social security. Therefore birth rates in developing countries have been consistently higher than in developed countries.

By 1901, in the U.K., the economically active population engaged in agriculture was 8.4 per cent., while in the sixties in developing countries the economically active population in agriculture was between 55 and 80 per cent (Table 4). In the eighties, in Sri Lanka, Pakistan and Malaysia, the figure was around 50 per cent, while Indonesia, Cambodia and Thailand had between 70-76 per cent. In these countries, rural-urban migration either has caused further unemployment or disguised unemployment in the urban sector, while in developed countries, the manufacturing and service sectors expanded offering employment opportunities to those in the agriculture sector causing rural-urban migration.

**TABLE 4**  
**Economically Active Population in Agriculture**

Sri Lanka	1963	55%	U.K.	1901	8.4%
Pakistan	1968	69%	France	1921	30.7%
Malaya	1960	71%	Germany	1925	22.2%
India	1961	73%	U.S.A.	1950	12.2%
Cambodia	1962	80%	Thailand	1960	82%

Source: I.L.O., 1971

In developed countries with economic development and with greater employment opportunities, there was an increasing demand for "quality labour" (quality here being

measured in terms of education and skills). Thus there was a need for people with a higher degree of literacy.<sup>7</sup> With rising standards of living and the employment of women there was the opportunity cost of children, which led to a fall in the birth rate. Children were viewed as "consumer goods" in the parents' decision making process. Expansion of employment played an important role in promoting smaller families. Statistical studies in countries like the Phillipines, Taiwan and Thailand have shown that women's participation in employment on the same terms as men has led to a lowering of the birth rate. Therefore, the view that employment curtails fertility has been widely accepted now.<sup>8</sup>

### **Education and Fertility**

At the 1981 census, of the 7,776,367 persons in the age group 5 to 29 years, 3,593,060 attended school, which amounted to 46.2 per cent in that age group. Among those in the age group 5 to 14 years, there was a relatively high school attendance. For instance, out of the 3,371,860 persons in this age group 2,831,960 attended school, which was about 84 per cent, compared with 65.3 per cent in 1971.<sup>9</sup> Among those in the age group 15 to 19, the percentage during this period had increased from 34.5 per cent to 40.9 per cent.

In 1981, a striking feature was that among those in the age group 15 to 19 years, there were more females attending school. In this age group there were only 29 per cent males (relative to 36.5 per cent in 1971) attending school compared with 41.9 per cent females, an increase of 7.4 per cent since 1971. At present, females comprise 51 per cent of those in school from about year 8 and about 58 per cent of those in the GCE A Level. Also males outnumber females in the drop-out rate for the years 2 to 9 of schooling.<sup>10</sup> Thus it appears that there has been an increasing number of women who have postponed marriage because of school attendance.

Education is an important factor influencing levels of fertility. Past studies indicate growing evidence of an inverse relationship between education and fertility.<sup>11</sup> This is true from the experiences of developed countries as well as of developing countries. In Sri Lanka there is increasing literacy and compared with developed countries there is increasing population, as well as increasing unemployment (about 20 per cent of the labour force) (Table 5). The desired effect of literacy on fertility seems to have slowed down because of unemployment and other factors discussed. Therefore, the linkage between literacy and fertility has not been clear in developing countries like Sri Lanka where there is high unemployment.

Education of women affects fertility behaviour through the opportunity cost of child-rearing activities. Therefore, unless employment opportunities are created for women, expansion of education to lower fertility would tend to be minimal. Out of the total labour force in Sri Lanka, 65.9 per cent are males, while only 34.1 per cent are females. As in other developing countries, in Sri Lanka too most women participate in non-economic activities.

TABLE 5

	Literacy rate	Population (million)	Birth rate	Unemployment (‘000’s)
1971	78.5	12.6	3.0	986.0
1981	87.2	14.8	2.8	857.1
1985	90.0	15.8	2.4	840.2
1987	-	16.3	2.1	-

(In 1977 over 1 million were unemployed. By 1989, unemployment was again over one million. During the Gulf crisis (1991) the return of nearly 70,000 Sri Lankans from the Middle-East had worsened the unemployment problem. By 1991, the literacy rate had reached 91 per cent).

*Source: Census of Population and Housing Sri Lanka 1981, Economic Review, People’s Bank, April/May 1988, August 1988 and July/August 1989, Statistical Pocket Book, Census Dept., Island International, 13th March 1991.*

Studies in other countries have shown that fertility is greatly reduced when women work in enterprises outside the home.<sup>12</sup> For example, Leon Tabh<sup>13</sup> states that fertility in working women is considerably lower than that in women not at work. A low fertility rate is very likely to continue in order for them to keep their job or take it up again without too many family difficulties. This process is largely responsible for the drop in fertility in Europe.

Economists have interpreted empirical evidence between educational attainment and fertility in relation to the increasing opportunity cost of time in child-rearing and employment. Thus by linking fertility decisions within the framework of the micro-theory of consumer behaviour, the rising price of a woman’s time, or the opportunity cost of children, causes her to re-allocate her time from being merely a housewife to that of pursuing income-earning activities. Thereby the development of a linkage between employment and fertility demonstrates the relationship between education and fertility.

As such it could be argued that in countries plagued with high unemployment, education to be effective should be followed by employment opportunities. Otherwise quantitative expansion of education would result in educated unemployment as experienced by some developing countries. Therefore creating employment tends to be as important as expansion of education in curtailing population growth.

In developed countries, expansion of education was part of normal economic development. Whereas in some developing countries like Sri Lanka, this was because of government intervention and the creation of a welfare state. For example, in 1945 Sri Lanka introduced the Free Education Scheme from kindergarten to university, and in the seventies spent about 10 per cent of the GDP on education. But with expansion of education, when peoples’ expectations are not fulfilled they create social, economic and

political problems and bring about instability in the country, as during the insurgency in Sri Lanka in the early seventies and the mid-eighties.

A study based on 1953 figures confirmed that fertility was highest among women in the illiterate category. There was evidence that illiterate women had an average of 6.39 children, while among women with intermediate or higher education, the average was 3.18 children.<sup>14</sup> There is also evidence from tables 6 and 7 that as education levels among women advanced, the number of live births declined, as women postponed marriage and child bearing to pursue education and employment.

Therefore, it appears that unlike in developed countries where there was a linkage between literacy and fertility which was distinct, in Sri Lanka, the overall effect of increasing literacy on population growth even though positive, had not been as significant as in developed countries. The experience of developed countries has shown that with economic development there was expansion of employment opportunities, which resulted in rising living standards causing decline in fertility rates, eventually leaving little or no population growth. This had not shown up in the case of Sri Lanka despite economic development.

### **Conclusion**

In Sri Lanka, on the one hand we have increasing literacy along with rapid quantitative expansion of formal education, and on the other, despite the trend in declining population there is increasing population growth with increasing unemployment.

When the crude birth rate of Sri Lanka (2.1 in 1987) is compared with that of the developing countries,<sup>15</sup> the population growth rate is not high relative to other developing countries. But when Sri Lanka is compared with developed countries, it appears that the effect of the increase in literacy rate on population growth had been moderate. Even though the inverse empirical linkage between educational attainment and fertility has not been demonstrated as in developed countries, education had a positive effect on fertility, but the magnitude of that effect had been diminished by increasing unemployment and socio-economic factors prevalent in traditional subsistence economies.

For instance nearly 50 per cent of the economically active population is still engaged in the rural sector where the traditional social system values children as an economic asset and as a social security. In pre-industrial societies with expansion of employment there was rural urban migration, whereas in developing countries rural-urban migration had either increased unemployment or had led to disguised unemployment.

In pre-industrial societies, with economic development and expansion of employment opportunities there was a demand for 'quality labour'. With rising standard of living resulting from economic growth there has been a fall in the birth rate. Children

TABLE 6  
 Number of Live-births Born by Ever-married Women According to Age and Educational Attainment,  
 Sri Lanka, 1971 Census

Age Group	No schooling	Grade (I-IV)	Grade (V-IX)	Passed GCE "OL"	Passed GCE "AL" and higher
15-19	0.633	0.624	0.534	0.380	-
20-24	1.681	1.634	1.365	0.942	0.519
25-29	3.100	3.077	2.480	1.580	0.940
30-34	4.463	4.426	3.665	2.415	1.859
35-39	5.706	5.450	4.593	3.221	2.561
40-44	6.035	5.678	5.080	3.594	3.099
45-49	5.973	5.758	5.084	4.094	3.240

Source: Based on 10 per cent sample tabulations of the 1971 census data (and ESCAP, Report, Country Monograph Series No. 4, 1976, Population of Sri Lanka).

**TABLE 7**  
**Educational Attainment of Women and Average Number of children Born, 1953 Census**

Educational attainment of women	Average number of children		Average number of children per fertile woman marrying in		Average age at marriage per ever married women
	Per ever married women	Per fertile women	15-19 years	20-24 years	
1st-3rd standard	6.45	6.16	6.5	6.5	20.4
4th-7th standard	5.97	5.65	6.4	5.7	21.0
Junior, senior & equivalent standard	5.49	4.95	6.3	5.2	21.5
Intermediate and higher standard	3.88	3.18	3.0	3.0	25.2
Not stated	6.66	6.41	6.6	6.6	20.1
Illiterates	6.71	6.39	7.1	6.5	20.0

Source: S. Kumaraswamy, *Fertility Trends in Ceylon, 1953 Census, Monograph No. 8* (Colombo, Department of Census and Statistics, 1956), tables 15 and 16.

were viewed as consumer goods and the demand for the first few became relatively fixed, ending up with smaller families. With employment, families tended to become smaller because the opportunity cost of having children is to forego income opportunities for women in the labour force.

The present unemployment figure in Sri Lanka is above one million. With increasing population, unemployment has also increased. The decline in the crude birth rate during 1971-87 from 3.0 per cent to 2.1, has been modest. This modest decline is despite the vigorous campaign conducted by the Family Planning Association since 1955 and the financial incentives given to the people by the government as an inducement for family planning. The crude birth rate during this period would have been much higher had it not been for migration to the Middle East for employment.

When compared with the experience of developed countries, the effect of increasing literacy on fertility has only been slowed, and not as much as expected. Though there is an overall trend showing the consistency of the positive effect of literacy on fertility, the effect of this has been diminished because of the impact of other variables.

Thus in Sri Lanka, even though literacy had some positive effect on population growth, unlike in the case of developed countries, it has failed to make a dent on the population problem.

Since 1987, there has been a steady decline in the annual growth rate. During the period following the mid-eighties, people in the country were either directly or indirectly exposed to violence and brutality of the most extreme form involving their families, relatives or associates. A separate study for this period would ascertain whether this climate of violence, insecurity and the intense social conflict experienced by the people during this era, had an effect on marriages and child-bearing in the late 1980's.

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