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Demographic Transition of Bangladesh

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Abstract: ***Demographic transition refers to the movement from high birth and death rates to lower birth and death rates as a country or region moves from pre-industrial to industrialized economic system. The demographic transition theory is an explanation of the change in pattern of mortality, fertility and growth rates as societies keep moving from one demographic pattern to another. This research paper discusses the past, current as well as the emerging changes in the demographic patterns of Bangladesh. Bangladesh has been a country which has recorded a high level of change in demographic trend over the decades. Bangladesh is one of the world's most densely populated country. The at present demographic transition in Bangladesh is leading to various changes in the age and size structure of the population of the country. The author through this paper has tried to explain the causes of variations and fluxes in the birth and death rate in different stages of demographic transition. The study uses time series data from various sources like, censuses, national level population surveys and estimations by the United Nations Population Division.***

Keywords: Demographic transition, Bangladesh, demographic trend, mortality, fertility

1. Introduction

The term demographic transition means that the population of the country moves or transforms from high levels to low and stable levels of mortality and fertility rate. Over the last few decades, in almost every country, the fertility as well as the mortality rate has shown a decline and are in the process of demographic transition. Due to demographic transition, the country faces various changes like, change in age and size composition as well as challenges regarding demography, economic opportunities, social problems, policy challenge for the state, etc. In the process of transition, the working age population increases, and the population between 0-14 years decreases because of the decline in the fertility rate and decline in mortality. Concomitantly, as there is a decline in population between 0-14 years, the child dependency ratio also decreases. The demography dividend is accomplished by expanding efficiency of labour, lessening the weight or pressure on the government schools or other administration, improving wellbeing and life span, decreasing the number of family members, etc. Bangladesh, a South Asian country, is among those countries that have shown great efforts to decrease the fertility and mortality rate, nevertheless, it faced many typical challenges and has limited resources along with poor infrastructure. Amidst the procedure of demographic transition, the impugned country faced many had faced many socio-economic, political challenges like, child marriage, political unrest, vulnerability of law and order, natural disasters, unemployment, poverty, high pressure on land as the population density was very high (approx. 156 million people living on 147,570 sq. Kilometres land). Since independence in 1971, one of the major problem faced by Bangladesh was its oversized population, so to control that, the country adopted and initiated a strong population control policy. Bangladesh also followed the Millennium Development Goal of the United Nations and also performed well in reducing poverty, increasing education and schooling, decreasing the gender disparity, increasing healthcare opportunities, etc.

1.1 Demographic transition in Bangladesh

Bangladesh's total population at the beginning of the 20th century was approximately 29 millions. The growth rate was less than 1% per annum until 1931 when the population size was approximately 35.60 million (Table 1).

Table 1: Population Size, CBR, CDR, natural growth rate and annual growth rate in Banglades, 1901-2011. Source: Statistical year book 2012, Bangladesh bureau of statistics (BBS) (2013a)

Census year	Population Size (millions)	Crude birth rate (CBR)	Crude death rate (CDR)	Natural Growth
1901	28.93	-	44.4	-
1911	31.56	53.8	45.6	8.2
1921	33.25	52.9	47.3	5.6
1931	35.60	50.4	41.7	8.7
1941	41.99	52.7	37.8	14.9
1951	44.16	49.4	40.7	87
1961	55.22	51.3	29.7	21.6
1971	76.40	47.4	19.4	28.0
1981	89.91	34.6	11.5	23.1
1991	111.46	31.6	11.2	20.4
2001	130.52	27.8	8.6	19.2
2011	149.77	22.6	6.6	16.0

At the start of the 21st century, the country's population was approximately 130 million in the year 2001. According to the 2011 census, the total population was estimated to be at approx. 150 million in 2011, which is double of the size of population in 1971 (the population of Bangladesh was 75 million in 1971). With an annual growth rate of 1.37 %, the total population is thus added to approximately 2 million people each year. The population growth rate in the 1950s and 1960s reached an all time high compared to any other decades. Because of sequential natural calamities like cyclone (1970) and famine (1974), inter alia, the 1971 liberation war killed millions of people, the growth rate of the country fell temporarily in the 1970s. Before 1990s, the population growth rate was about 2% and after 1990s, it began to decline and reached nearly 1% in 2010 (fig. 1).

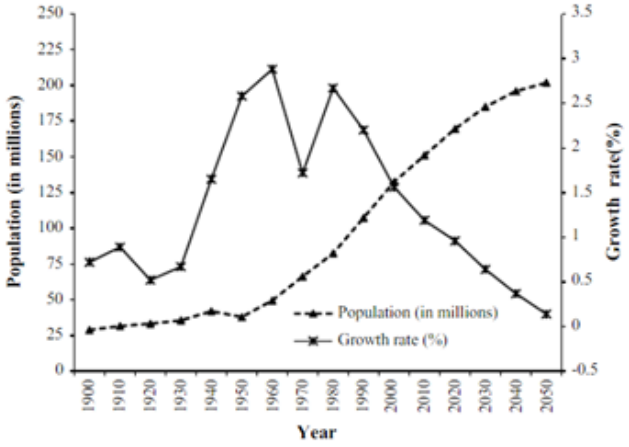


Fig. 1 Total population (in millions) and population growth rate (%), 1900–2050. *Source:* Bangladesh Bureau of Statistics, 2011; UN (2014)

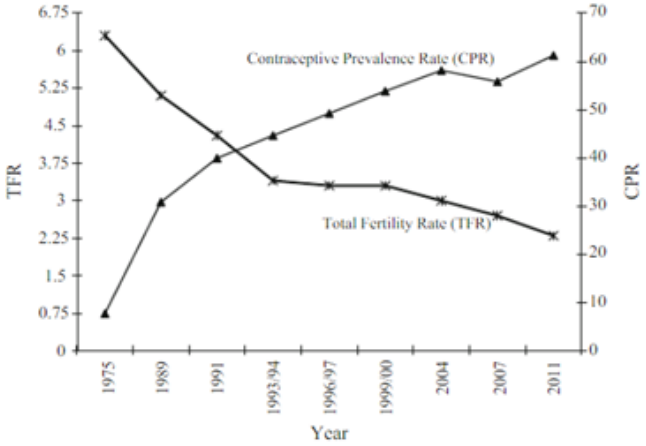


Fig. 2 Contraceptive prevalence rate (CPR) and total fertility rate (TFR) in Bangladesh, 1975–2011. *Source:* NIPORT et al. 2013

The principle reason for the decline in the population growth rate during 1990s was decline in fertility rate and steady fall in mortality rate. According to many researchers, the decline in the fertility rate was due to the family planning program initiated by the Bangladesh's government. Notwithstanding, the growth rate of population has declined in the previous years, the population will continue to increase in the upcoming years because of the in-built drive of population. There is a decrease in the total fertility rate (TRF) from 6.3 births per woman (1970s) to 3.3 births (1990s), an enormous decrease of 3 births per woman in two decades. There was an increase in the use of contraceptive but despite of that, the TFR was constant in the 1990s at approximately 3.3 births per woman (Fig. 2).

The TRF began to decline again in the 2000s after a period of stagnation, reaching 2.7 births (2007) and 2.3 (2011). The infant mortality rate, on the other side, dropped from 87 infant deaths per 1000 births in 1993–1994 to 43 in 2011. All other mortality attributes like the infant mortality rate, below-five mortality rate, mortality rate and crude death rate, etc., are also declining. Life expectancy has increased from 55 years (1981) to 68 years (2011). There is a decline in the population growth rate from 2.5% (1974) to 1.4% (2011).

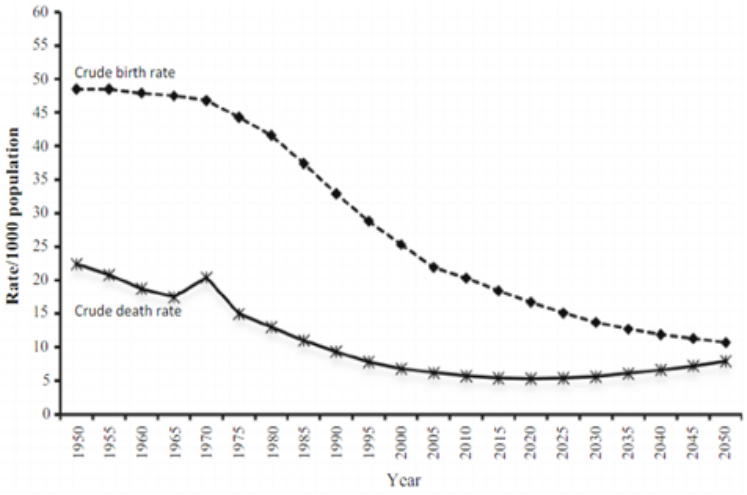


Fig. 3 Trends in the crude death rate (CDR) and crude birth rate (CBR) in Bangladesh, 1950–2050. *Source:* UN (2014)

Fig. 3 shows that the population transition has undergone through a typical change in the mortality and the fertility rates, which have shown a decline over the years. Mainly due to the use of modern contraceptives, sterilisation, hormonal method and other improvement in education, awareness among people, etc, the fertility declined in the country, and due to advancement in science and techniques, improvement in medical and healthcare facilities, etc, the mortality rate declined. Bangladesh experienced the pre-demographic phase till 1960s and entered into the first phase in 1960s which a slow decline of fertility rate and a slump in mortality rate. It experienced the second phase in 1980 with a slump in fertility rate and presently, Bangladesh is in the third phase of demographic transition (Table 1). Due to high rate of both fertility and mortality, Bangladesh recoded lower than 1% of growth rate until 1931. Bangladesh recorded the highest population growth in the year 1970 when the growth rate was 3.10% because there was a great decline in the mortality rate but the crude birth rate remained high which led to a enormous increase in the population but since then the growth rate started to decline. To reach a stationary level of population, the mortality and the fertility should reach at the same lower point so that the population remain consistent.

According to the UN, in 2050, the population of Bangladesh will exceed 200 millions, regardless whether it attains fertility at a substitution level. More than 200 million populations in Bangladesh means 1336 persons per sq. Km. The growth rate will continue to decline and the population will reach and get stable around 250 million by 2080.

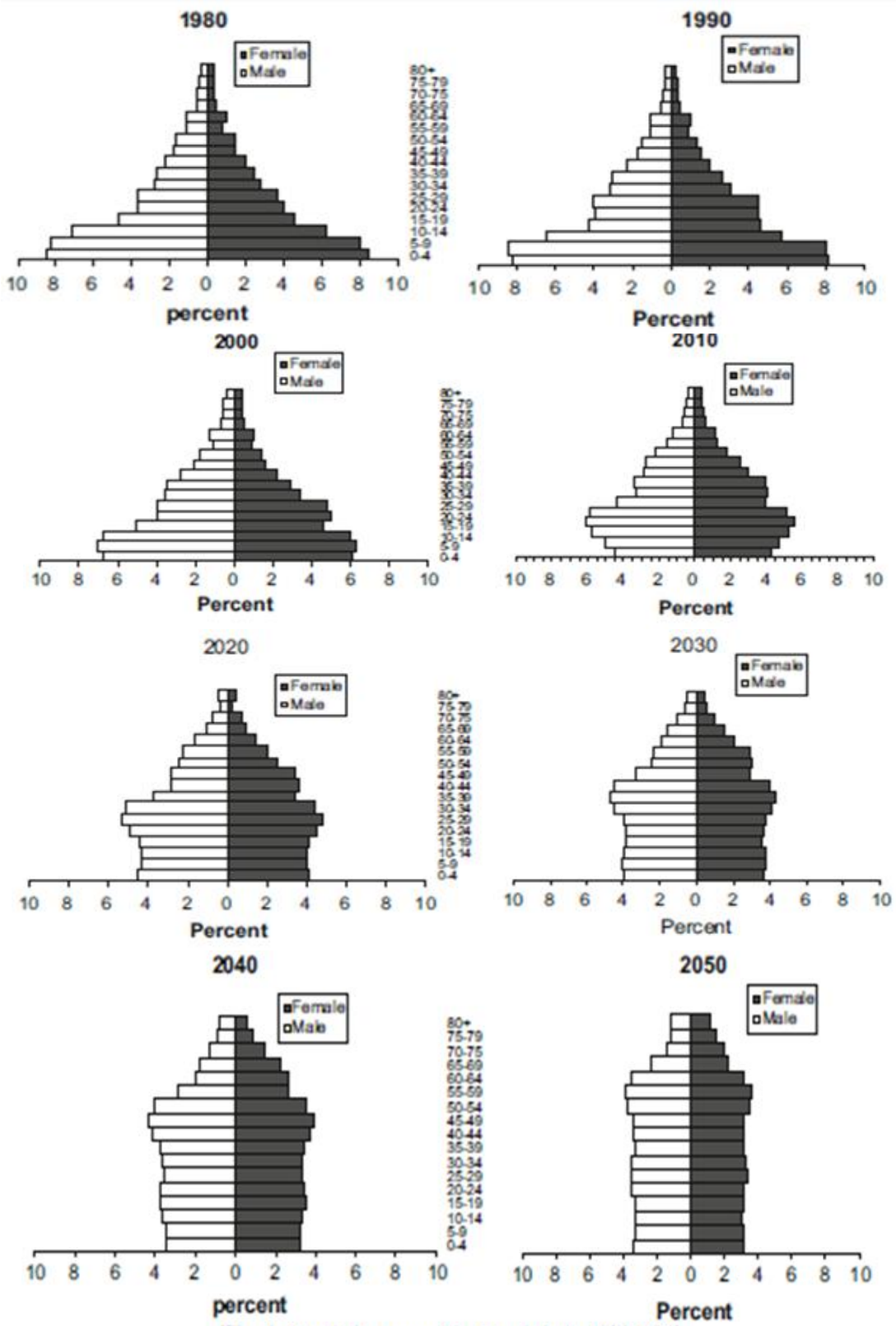
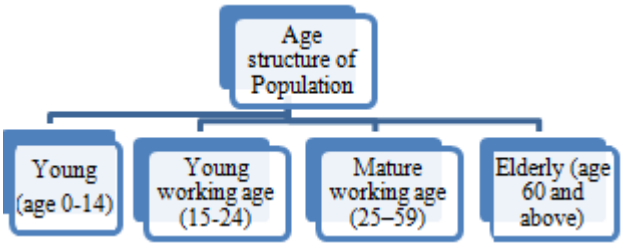


Fig. 4 Population pyramids, Bangladesh, 1980–2050

1.2 Age structural transition in Bangladesh

An important aftermath of demographic transition is the Age-structure transition (AST). "Population Pyramid" is the most effective, widely and commonly used method which is used to graphically study and explain the age-sex structure of the population. The age-sex pyramid is a pyramid which shows the proportion of males and females at different age group. The population pyramid is shown by fig. 4 from 1980 to 2050.There has been a change and transition of the

population in the terms of age-sex pyramid in different phases of demographic transition and this change will continue in the future. During the period 19980-2000, the shape age-sex pyramid was a triangular shaped pyramid with a broad base and which is tapered from the top which depicts high crude birth rate and also high mortality rate. With the successive years the fertility rate declined and the age-sex pyramid also changed its shade and during the period of 2000-2010 the base of the pyramid comparatively shrunk and had a narrow base which implies that the population below 5 years has declined. The proportionate share of population below 5 years decreased from over 16% (1980) to approximately 8% (2010). Likewise, the population between 5-14 years has also shown a decline over the years and on the other hand, there has been an increase in the population between 15-59 years, which is the working population and also there has been an increase in the population above 60 years. This is shown by the narrow base of the pyramid and more population in the age group of 15-59 years. Figure 4 also shows that in the next 4 decades, this momentum will continue and more share to the population of Bangladesh will come from the people between the age of 15-59 years and there will be continuous decline in population between 15 years because there will be decline in the birth rate and also there will be a increase in the proportionate share of population of people in the age group of 60 years and above. Therefore, the shape of the pyramid will shift from a triangular shaped to a bell shaped pyramid in the coming decades.



The population of a country is broadly divided into four categories; young population (0-14 years), young working population (15-24 years), mature working population (25-59 years) and elderly population (60 years and above). The young population as well as the elderly population becomes a burden on the family economically because the family has to incur the expenses of food, education, healthcare, etc of the young population and also has to bear the expenses on food, medical and health facility and other amenities of the elderly population. The population between 15-24 years, i.e. the young working population also have expense but these expenses are different from other population and the population between 25-59 years, i.e. the mature working population tends to earn more and save more. The aforementioned four categories of age structure of population are shown by Table 2. Due to high rate of fertility, the share of population in the age group between 0-14 years was high till 1980. Later, the fertility declined in the 1980s and the share of population below 15 years began to decline from nearly 44% in 1980 to about 32% in 2010. As per the UN, there will be a continuous decline in the population below 15 years and till 2050, the share of population below 15 years would be around 17% because of which there will be a reduction in the burden over the family. From 1980, it has seen that nearly 19% of the total population is shared by people of young working age, which is expected and predicted to continue further till 2020, and then it is expected that the share of young working age population will decline after 2020 and will be about 13 % in 2050. In 1980, the share of the mature working population was about 34% and it declined till 2000 when it was approximately 36% and since then the share has been continuously increased and reached nearly 41% in 2010 and will further increase in the coming years and is estimated that it will reach about 48% in 2050. Besides this, the proportionate share of people at 60 years or above is also continuously increasing at a slow rate and is expected to share nearly 22% of the total population in 2050.

Table 2: Estimates and projections (medium variant) of total population (in millions), women reproductive age (in millions), and percentage of population by age group.
Source: UN (2014)

Year	Total Population (million)	Women of age 15-49 (million)	% of population by broad age group				
			0-14	15-24	25-29	15-59	60+
1950	37.9	8.4	41.2	18.8	34.2	5.3	5.8
1960	49.5	10.8	43	18.1	33.5	51.6	5.4
1970	66.3	14	44.7	17.9	31.9	49.8	5.5
1980	82.5	17.6	44.4	19.1	30.8	49.9	5.7
1990	107.4	24	42.1	20.3	31.9	52.2	5.7
2000	132.4	32.6	37	20.9	35.9	56.8	6.2
2010	151.1	41.6	31.7	20.3	41.2	61.5	6.8
2020	169.6	48.1	26.5	18.7	46.7	65.4	8.1
2030	185.1	50.9	23	15.9	49.3	65.2	11.7
2040	195.9	50.2	19.5	14.3	49.7	64	16.5
2050	201.9	47.2	17.3	12.5	47.9	60.4	22.3

2. Conclusion

Bangladesh has recently completed the second phase and has entered into the third phase of the demographic transition following the theoretical demographic transition model. Bangladesh has followed almost the same pattern of demographic transition as followed by many East Asian and European countries. Due to such transition there are significant changes in the age structure of the population. The demographic transition offers various opportunities and challenges at different stages of life. The proportionate contribution of the young population, i.e. population below 15 years is showing a decline and this will continue to decline further. The share of the working age population, i.e. population between 15-59 years has shown an increase and it will continue to increase, as well as, the share of the elderly population, i.e., population at 60 years and above has increased and will continue to increase and due to improvement in healthcare and medical facilities, Bangladesh has succeeded in increasing the life expectancy rate and at present the life expectancy of Bangladesh is 72 years (2016).

There has been a youth bulge and this will continue for the next quarter of the millennium. This has increased the demand for higher healthcare, education, employment opportunities and housing, etc and will continue to exert pressure on them. Because of its rapid growth, Bangladesh could benefit in the workforce by rapidly increasing job opportunities but its failure will result in some negative effects like, crimes, poverty, political instability, chaos, unemployment, etc

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