

West Bengal Becomes Older: Evidences from Demographic Transition

Abstract

One of the successful stories of human development is the population ageing driven by the improvement in fertility and mortality that are highly responsive with developmental discourse. This mechanism, in turn had contributed in the spectacular growth in the aged population to the total population. Rising share of aged population causes the celebration and gives the hopes for population stabilization. This celebration also causes with multilayered and multiple responsibilities because the growth of total population is continuously declining but reverse stands true for the elderly population. The state of West Bengal continuously moving towards the demographic transition. Hence, this paper tries to analyze the rise of aged population and other associated aspects in the mechanism of demographic transition.

Keywords: Older Population, Demographic Transition, Fertility, Mortality, West Bengal.

Introduction

The process of population ageing¹ has been a desirable phenomenon in the developmental history of mankind. The betterment of the society and the process of ageing are related to each other; in fact, the share of aged population to total population is considered one of the best indicators of levels of development. At the current demographic behaviour of the different societies the phenomenon of population ageing has become a major concern throughout the world and every country either has experienced or is experiencing the process of ageing. The process of ageing has already entered in the developed countries during the first or second quarter of previous century and either has entered or is entering in the developing countries. Up to the recent past it was considered as a mere structural shift from younger ages to older ages, particularly in the developed countries but now it has become a major concern for every society in the world. North-western European countries are the front runners in this demographic transition as they started to age in the first quarter of the previous century. After the onset of medical revolution, most of the developing countries of Oceania, Latin America, Asia and Africa had experienced the process of ageing.

Demographically, ageing refers to the continuous process of structural change in the age structure of the population which moves towards older ages and it also related to the improvement of vital indicators of fertility, mortality and longevity. Fall in the fertility leads to the lower share of the younger age group cohorts in the total population and decline in the mortality leads to the higher share of aged people and pushes the life span upwardly. The combined improvements at these vital indicators accelerate the share of aged to the total population. The share of elderly population to the total population rises continuously which is, demographically known as ageing of the population (Karkal, 1999, Rabindranathan, 2006). Population ageing is occurring because of declining fertility rate, lower mortality and increasing survival at older ages (Sathyanarayana, Kumar and James, 2012).

Objective and Rationale of the Study

The phenomenon of population ageing is the resultant of declining of the vital indicators of fertility and mortality and increasing longevity. Advancements in the medical science, control over many fatal diseases, averagely good dietary intake, technological advancements, improvement in health, food supply and sanitation, control over droughts and famines etc. have led the mortality downward at anticipated level. But the rate of fall in mortality has been considerably higher than fall in fertility. Thus both the dynamics of population change have led in the sizeable increase in the elderly population; therefore, successively large cohorts enter in the span



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of older ages. The present paper tries to analyze the correlates of ageing and also explains various associated aspects of ageing in the background preview of demographic transition of West Bengal.

For the present study the state of West Bengal is selected. The demographic progress made by West Bengal has been impressive for the demographers. The demographic indicators had been at par with comparison to the demographically advanced states like Kerala, Tamil Nadu, Punjab, Himachal Pradesh etc. and well ahead than the

national average. The share of elderly population has increased from 5 per cent in 1961 to about 8.5 per cent in 2011 and it is expected to rise up to 14.2 per cent in 2026. Continuous rising share of aged population has pushed the state almost in to the last stage of demographic transition. The state deserves a special attention for the high performance at the demographic front but lagging behind at the economic front. A brief overview of a few developmental indicators is presented in table 1.

Table: 1 Comparison of a few developmental indicators among demographically high performing states in India

Indicators	West Bengal	India	Kerala	Punjab	Himachal Pradesh	Tamil Nadu
Population growth (%) ¹	13.84	17.7	4.91	13.89	12.94	15.61
Literacy (%) ²	76.26	74.04	94	75.84	82.8	80.09
Sex ratio (females per 000 males) ²	950	943	1084	895	972	996
Longevity (years) ³	70.2	67.9	74.9	71.6	71.6	70.6
Per capita income(Rs.) ⁴	70059	74380	103820	92300	92350	112664
Poverty rate (%)	29.7	29.5	11.3	11.3	10.9	22.4

Source: Reserve Bank of India, 2016-17, Ministry of Health & Family Welfare (2018), Census of India. (2011), Planning Commission (2014),

Notes: ¹ of 2001-2011, ² of 2011, ³ of 2010-2014, ⁴ per capita Net States Domestic Product (NSDP) at factor cost 2013-14 (current price with base year 2004-05).

Size and Growth of Elderly Population in West Bengal

Population ageing is a major structural shift in the demographic history of West Bengal and an inevitable consequence of advancing the demographic transition experienced by the state. United Nations classifies populations into three major categories, viz. less than 4 per cent persons aged above 60 years as young, 4 to 7 per cent as mature and above 7 per cent as old or aged (Karkal, 1999). In 2001 state has already entered from mature society to

old or aged society, as far as above classification is concern (table 2). The demographic progress made by West Bengal has been impressive for the demographers, particularly after 1991. This progress has been at par with comparisons to the demographically advanced states like Kerala, Tamil Nadu, Punjab, Himachal Pradesh etc. Table 2 and figure 1 depict the comparison between the growth of total population as well as the share of aged population to total population.

Table: 2 Growth of total population and elderly population in West Bengal, 1961-2021

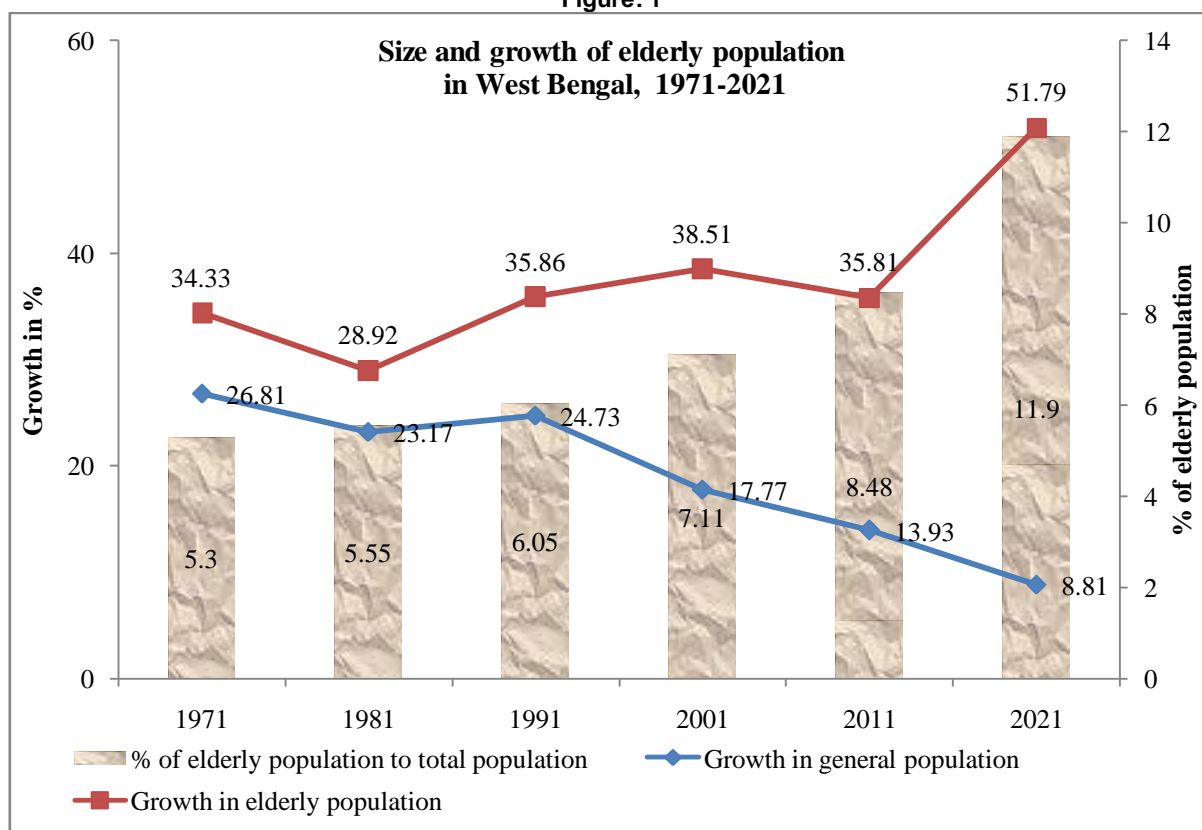
Census Year	Growth in general population (%)	Elderly population (in 000')	Growth in elderly population (%)	% of elderly population to total population
1961	--	1749	--	5.01
1971	26.81	2349	34.33	5.30
1981	23.17	3029	28.92	5.55
1991	24.73	4116	35.86	6.05
2001	17.77	5701	38.51	7.11
2011	13.93	7742	35.81	8.48
2021	8.81	11573	51.79	11.9

Sources: 1. Census of India of various reports, 2. projected population for 2021 has been extracted from: Registrar General and Census Commissioner of India 2006. Note: decimal figures may vary marginally due to rounded off.

There are sizeable differences in the growth of the said two populations (table 2 and figure 1). The growth rate of elderly has been more than the other counterpart and the difference is continuously expanding. In the decades of 2001 and 2011, growth

of grey population has been more than double than the growth of total population. It is projected that the growth of elderly population in next census will be about 52 per cent.

Figure: 1



The share of aged 60 years and above to total population had increased very rapidly and will increase more rapidly in the near future. This increase was very moderate up to the decade of 1981. But thereafter it has increased very rapidly. In the latest census it was about 8.50 per cent. Demographers projected that in 2021 the grey population will form about 12 per cent of the total population (table 2 and figure 1). In 2021 about 12 million elderly will pose the serious challenges before the policy makers, government and non-government institutions.

Ageing dynamics in West Bengal

As discussed earlier there are three fundamental dynamics of ageing namely fertility, mortality and longevity. In this discussion they are represented by CBR (Crude Birth Rate), CDR (Crude Death Rate) and life expectancy at birth respectively. Like most of the demographically developed societies of the globe and India, there is continuous fall in mortality as well as in fertility in the state. So, the ageing process is going at faster rate than never before in the history of demography. Changes in the pattern of these indicators have been presented in table 3.

Table: 3 Ageing dynamics in West Bengal, 1901-2026

Census year	Population (crores)	Crude Birth Rate (CBR)	Crude Death Rate (CDR)	Natural increase	Longevity (in years)
1901	1.69	n.a.	n.a.	n.a.	n.a.
1911	1.79	38	38	0.0	n.a.
1921	1.74	33	50	-17	n.a.
1931	1.89	29	42	-13	n.a.
1941	2.32	28	n.a.	n.a.	n.a.
1951	2.63	n.a.	n.a.	n.a.	n.a.
1961	3.49	42.9	20.5	22.4	44.30 (1951-61)
1971	4.43	19	n.a.	n.a.	57.3 (1971-75)
1981	5.45	33.2	11.0	22.2	Males= 56.5, Females= 58.4
1991	6.81	27.0	8.3	18.7	Males= 61.0, Females= 60.7
2001	8.02	20.6	7.0	13.6	Males = 66.7 (for 2001-05) Females = 69.4 (for 2001-05)
2011	9.13	15.5	6.5	9.5	Males = 69.2 (for 2011-15) Females = 72.1 (for 2011-15)
2021	9.73	14.8	7.0	7.8	Male = 71.0 (for 2021-26) Females = 74.3 (for 2021-26)
2026	10.01	14.3	7.4	6.9	

Sources: 1. Jain, S. P. (1961). Census of India 1961. Paper No. 2 of 1963, Life Table 1951-1961.

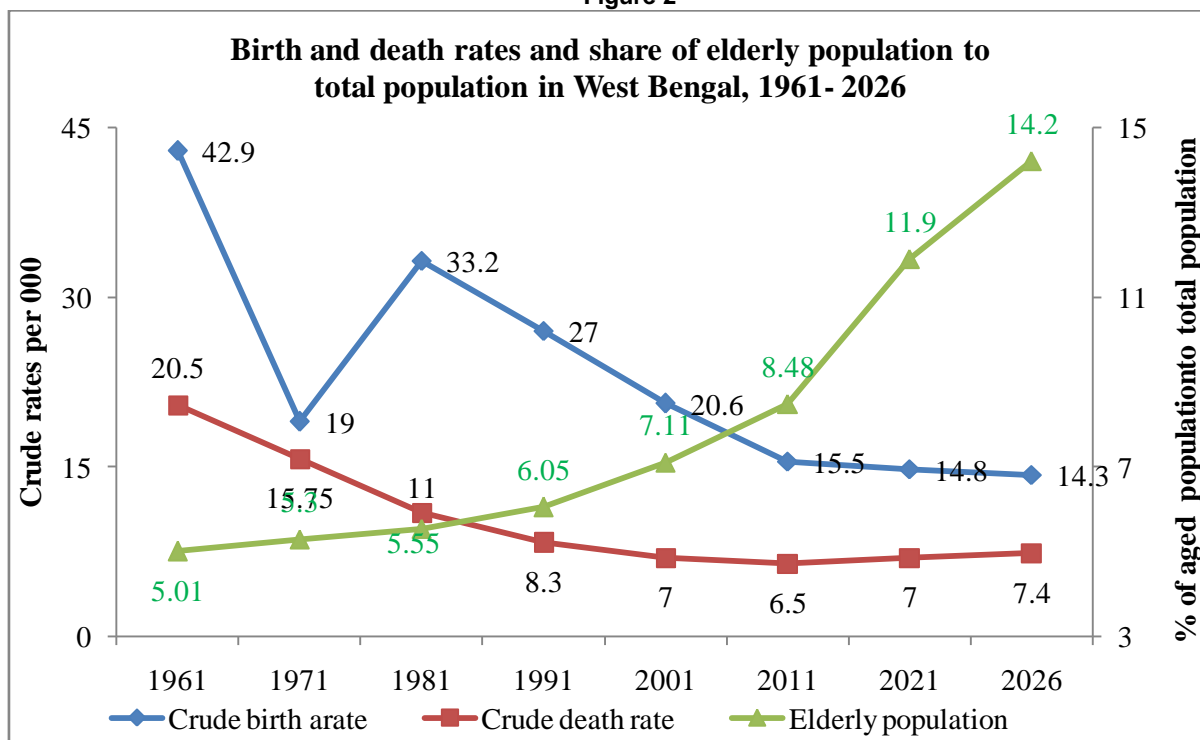
Retrieved from http://shodhganga.inflibnet.ac.in:8080/jspui/bitstream/10603/35642/13/13_statistical%20appendix.pdf on 17.06.2016 at 15.15 hours, 2. Registrar General and Census Commissioner of India (2006) for projected figures of 2021 and 2026, 3. Subaiya and Bansod (2011), 4. Census of India, (2001) and (2011), 5. Ghosh (2013).

Note: decimal figures may vary marginally due to rounded off.

Since 1901 the population of West Bengal is continuously increasing except 1921 when the growth rate was negative (table 3). Spread of various epidemics, frequent occurrence of droughts and famines between 1901 to 1921, wars etc. were responsible for this reverse phenomenon. But thereafter, population started increasing gradually. During the first three decades from independence, fertility remained constantly high and mortality declined dramatically. So, this phase is considered as

population explosion in the demographic transition of West Bengal. This momentum parallely pushed the longevity upwardly and also led to the greying of the population. On the onset of 21st century onwards population growth rate declined sizeably, probably due to expansion of education, acceptance of family planning methods, orientation towards small family size, improvements in the health and hygiene, expansion of the curative and preventive health care services etc.

Figure 2



Note: In order to maintain the continuity in the curve of Crude Death Rate (CDR), the same for 1971 was derived by interpolating former and later observations.

Along with lower birth and death rate, longevity in the West Bengal is also better than the national average (table 1). In 2011 longevity was more than 70 years, which was higher than most of the Indian states. Despite the larger rural population and agriculture base, inadequate urbanisation and industrialisation, poor health infrastructure etc. West Bengal has been the success story at the demographic front. Currently the state compares fairly well with many demographically high performing states (Alam et al 2014). Thus the state in general and people in particular deserve the special attention and appreciation.

Continuous decline in CBR led to the lower share of the child population to the total population and lower CDR complementarily led to the higher share of the older age cohorts (table 3 and figure 2). Both the mechanisms led to the upward shift in the longevity and greying of the population simultaneously. Mortality induced ageing at the top of

the age sex pyramid (referred as higher share of persons of higher ages to total population) is another distinct demographic dynamic in the population ageing in West Bengal. Scholars across the streams agree that in the third decade of the present century the state will enter in the final stage of demographic transition. Thus it is the period of challenges, opportunities and hope for policy makers, government and non-governmental institutions.

Changing broad age structure of population of West Bengal

Demographers divide population into three major age groups viz 0-14, 15-59 and 60 years and above, namely Child, adult and older population respectively. After dividing population of West Bengal into said three major age groups then it is evident that structural changes are taking place in the above said age groups particularly after 1961. Changes in the age structure in the major age groups in West Bengal have been presented in table 4.

Table: 4 Structural changes of the major age groups in West Bengal, 1961-2026

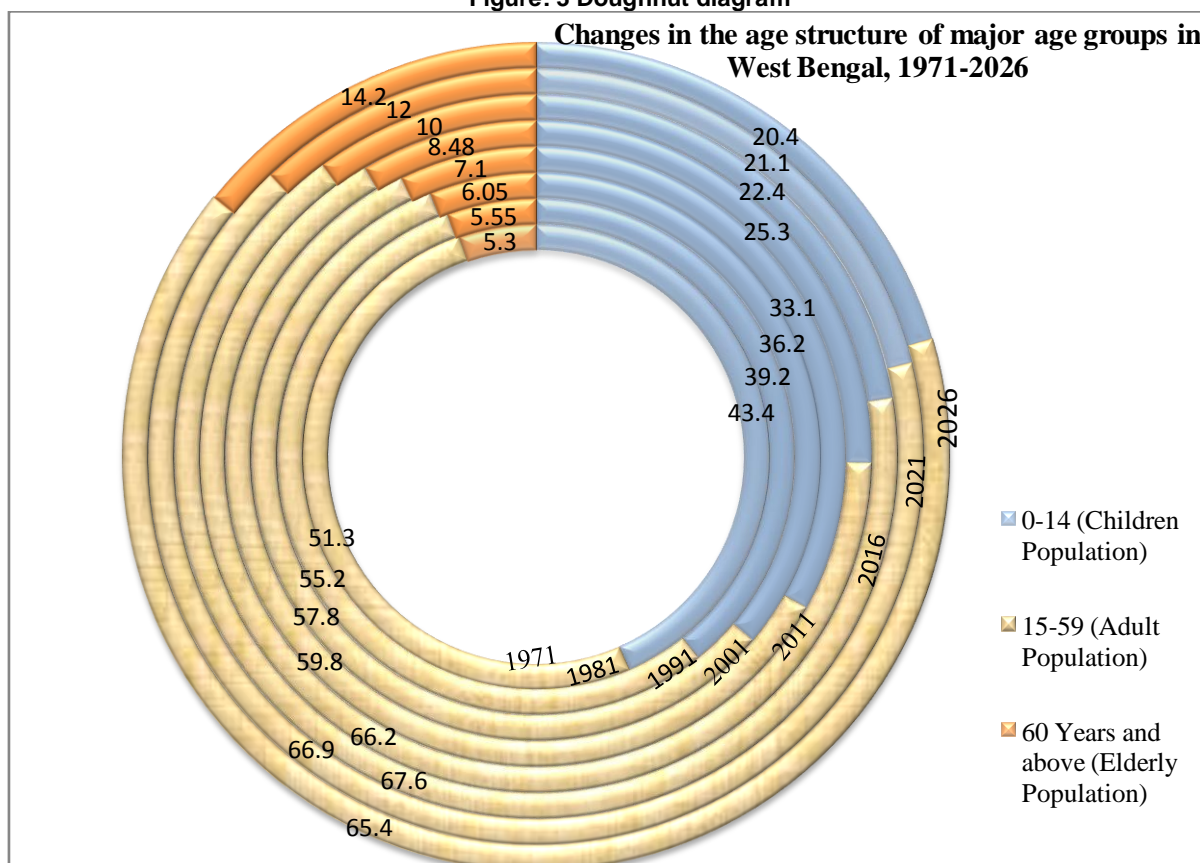
Census Year	Major age group (in % of total population)		
	0-14 (Children Population)	15-59 (Adult Population)	60 Years and above (Elderly Population)
1961	40.7	54.3	5.01
1971	43.4	51.3	5.30
1981	39.2	55.2	5.55
1991	36.2	57.8	6.05
2001	33.1	59.8	7.10
2011	25.3	66.2	8.50
2016	22.4	67.6	10.00
2021	21.1	66.9	12.00
2026	20.4	65.4	14.2

Sources: Census of India 2001 and 2011, Registrar General and Census Commissioner of India 2006. Note: decimal figures may vary marginally due to rounded off.

In general, up to the latest census of 2011 the share of child population is continuously decreasing but reverse is true for adult and grey populations. It is evident that adult age cohort has been the biggest one and continuously rose up to

2016 in the demography of West Bengal (table 4 and figure 3). The increase in the share of aged population to total population has been very steady, smooth and continuous than other two major age groups.

Figure: 3 Doughnut diagram



Improvement in demographic indicators gives the hope for population stabilization in present time. The continuously expanding share of working population is the result of the higher fertility and low mortality trends in the recent past. Demographers agreed that there will be further fall in the child population and reverse phenomenon will be true for grey population. The rapidly increasing share of elderly population to total population is due to sharp decline firstly in the mortality and followed by fertility and upward shift in the longevity. All these dynamics were improved due to better vaccinations, food

security, health and hygiene, wider acceptance of the curative, preventive and promotive health care services, education etc.

Scholars across the streams agreed that the share of adult population (15-59) has reached the maximum threshold level and now there is no further room for increase in future. This assumption has also been supported by the technical advisory committee of census of India 2006². The share of the working population will decline from 67.6 per cent in 2016 to 65.4 per cent in 2026 in the state of West Bengal (table 4 and figure 3).

The share of child population will further decline and volume and magnitude of elderly population will increase very rapidly in the near future. Various estimations also reveal that in between 2030 to 2040 the elderly population will surpass to the child population in the first time in the demography of West Bengal.

Differentials in the growth of elderly population by gender and residence.

There are sizeable differentials in the growth of elderly population with respect to gender and residence (Table 5 and figure 4). The share of elderly

population has increased from 5 per cent in 1961 to about 8.5 per cent in 2011 and it is expected to rise up to 14.2 per cent in 2026 (table 2 and figure 1). The growth rate has been very steady and consistent. The share of male population rose from 4.63 per cent in 1961 to 8.22 per cent in 2011 and their female counterpart from 5.44 per cent to 8.75 in the same duration. So, the proportion of elderly females had been higher than their male counterparts since 1961. Table 5 reveals the share of elderly population to total population from 1961 to 2011 by gender and residence.

Table: 5 Percentage of elderly population to total population by gender and residence in West Bengal, 1961-2011

Census year	Total			Rural			Urban		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
1961	5.01	4.63	5.44	5.19	4.92	5.47	4.45	3.83	5.33
1971	5.30	5.03	5.61	5.40	5.19	5.63	4.99	4.59	5.53
1981	5.55	5.32	5.80	5.51	5.30	5.72	5.67	5.38	6.03
1991	6.05	5.93	6.17	5.86	5.72	6.00	6.54	6.46	6.63
2001	7.11	6.72	7.53	6.59	6.13	7.08	8.44	8.18	8.73
2011	8.48	8.22	8.75	7.87	7.50	8.25	9.78	9.75	9.80

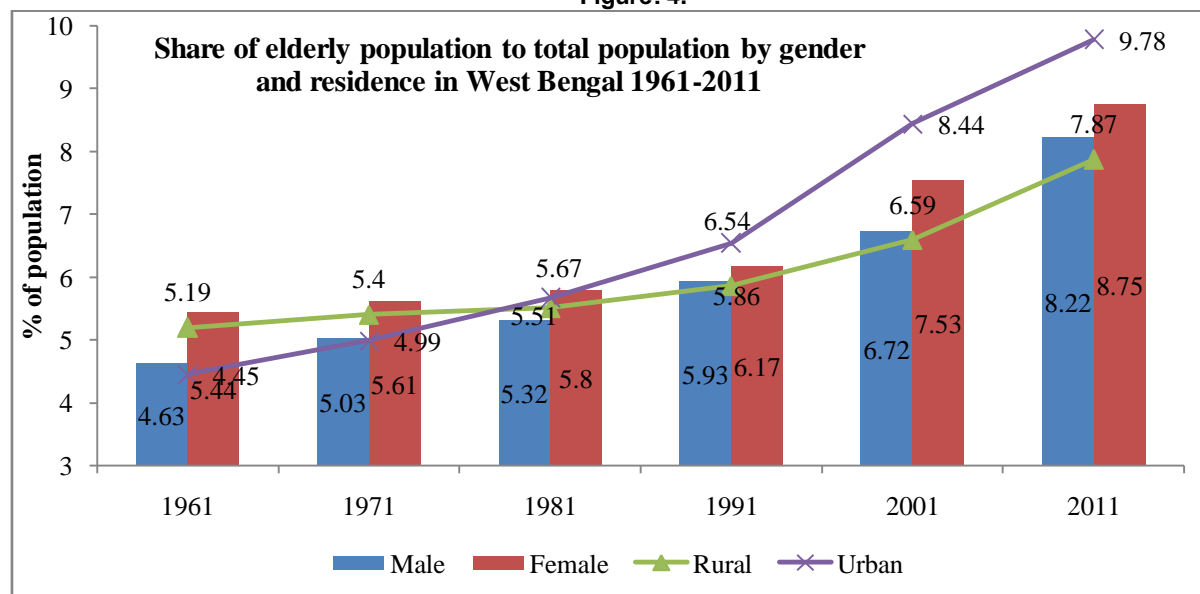
Source: Collected by investigator from various censuses of India reports.

Note: decimal figures may vary marginally due to rounded off.

It is evident that, the growth has been more among urbanites than ruralites. In 1961 the share of grey population was 5.19 per cent and 4.45 per cent in rural and urban areas respectively. It denotes that up to 1971 rural areas had higher share of grey population to total rural population than their urban counterparts but thereafter, reverse stands true. In

2011 the share of elderly population was 7.87 per cent and 9.78 per cent to total population in respective rural and urban areas (table 5 figure 4). It implies that growth has been more among urban elderly than ruralites and is expected to rise further in the coming censuses.

Figure: 4.



A huge chunk of economically productive population migrates from rural to urban areas. So, the rural areas should report higher share of grey population than urban areas. But reverse stands true. Probably it is due to better health infrastructure in urban areas, emergence of the new urban centre throughout the state, upward shift in the longevity in urban areas, average improvement socio-economic parameters of life in such areas etc. had led to higher share of grey population to total population in urban

areas which in turn counter-balances the effects of migration of adult population from rural to urban areas.

Regional variations of population ageing in West Bengal

Latest data of 2011 census gives the scope for the inter-district comparisons of elderly population in West Bengal. Out of the total population 9,12,76,115 of state 77,42,382 are the senior citizens which yield about 8.5 per cent of the total population.

Among the districts, share of elderly population ranges from 11.76 per cent to 6.28 per cent as Kolkata registered former and Uttar Dinajpur registered later. Kolkata is followed by North Twenty

Four Parganas (9.92%), Hugli (9.82%), Nadia (9.40%), Bankura (9.28%) etc. while to the lowest share of Uttar Dinajpur (6.28%) is preceded by Maldah (6.38%), Jalpaiguri (6.88%) etc.

Table: 6 District wise Percentage Share of Elderly Population to Total Population by Residence And Gender, 2011

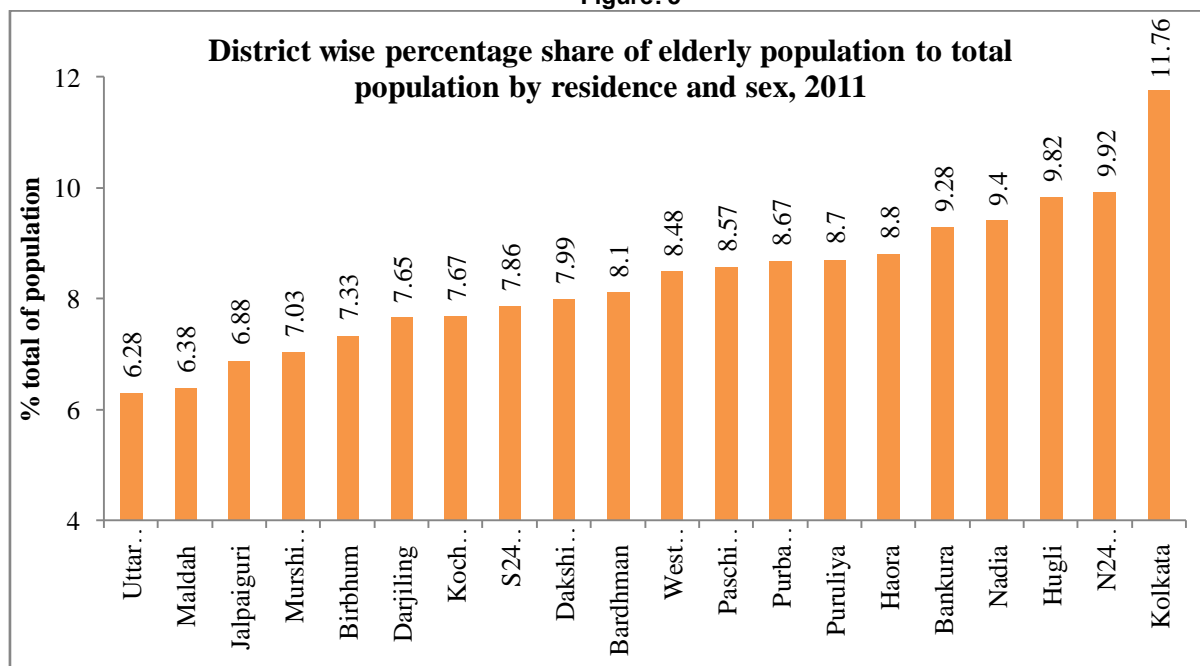
S. No.	District	Total			Rural			Urban		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
1.	Darjeeling	7.65	7.91	7.37	7.35	7.71	6.98	8.11	8.11	7.99
2.	Jalpaiguri	6.88	6.93	6.83	6.42	6.49	6.35	8.11	8.10	8.12
3.	Koch Bihar	7.67	7.47	7.88	7.40	7.20	7.61	10.00	9.82	10.19
4.	Uttar Dinajpur	6.28	6.27	6.29	6.11	6.12	6.10	7.49	7.35	7.63
5.	Dakshin Dinajpur	7.99	7.82	8.17	7.51	7.34	7.69	10.90	10.77	11.03
6.	Maldah	6.38	6.20	6.57	6.29	6.19	6.48	6.92	6.74	7.13
7.	Murshidabad	7.03	6.62	7.47	7.09	6.66	7.55	6.79	6.44	7.15
8.	Birbhum	7.33	6.85	7.83	7.16	6.62	7.73	8.47	8.43	8.50
9.	Barddhaman	8.10	7.73	8.49	8.07	7.43	8.74	8.16	8.19	8.12
10.	Nadia	9.40	8.86	9.97	8.85	8.25	9.50	10.81	10.45	11.19
11.	N24 Parganas	9.92	9.86	9.98	8.15	7.88	8.44	11.24	11.35	11.13
12.	Hugli	9.82	9.54	10.11	9.03	8.48	9.60	11.07	11.22	10.92
13.	Bankura	9.28	8.39	10.20	9.17	8.24	10.15	10.43	10.04	10.80
14.	Puruliya	8.70	8.15	9.26	8.77	8.19	9.38	8.17	7.91	8.45
15.	Haora	8.80	8.61	9.01	8.60	8.07	9.16	8.92	8.92	8.92
16.	Kolkata	11.76	11.71	11.83	0.0	0.0	0.0	11.76	11.71	11.83
17.	S24 Parganas	7.86	7.68	8.04	7.58	7.34	7.82	8.68	8.68	8.68
18.	Paschim Medinipur	8.57	8.20	8.96	8.46	8.07	8.87	9.36	9.13	9.60
19.	Purba Medinipur	8.67	8.54	8.80	8.78	8.65	8.92	7.83	7.76	7.90
	West Bengal	8.48	8.22	8.75	7.87	7.50	8.25	9.78	9.75	9.80

Source: Calculated by investigator from Census of India (2011), Provisional Population Totals Paper 1 of 2011: West Bengal. Note: decimal figures may vary marginally due to rounded off

Kolkata again tops the list as far as male and female share of elderly populations to respective total populations are concern. For the male elderly, only

Kolkata has shown the double digit share but for female elderly many districts have shown this phenomenon (table 6 and figure 5).

Figure: 5



Among the rural populations the share of elderly population ranges from 9.17 per cent in Bankura to 6.11 per cent in Uttar Dinajpur. On the Urban sides it ranges from 11.76 per cent in Kolkata to 6.79 per cent in Murshidabad. However the share

of female elderly with 8.75 per cent is more than their male counterpart 8.22 per cent whereas the share of urban elderly is more than rural counterparts (table 6 and figure 5).

In order to search for better economic opportunities, a huge chunk of adult population migrates to the urban area. This phenomenon should retard the percentage of elderly to total population in urban areas which is not true as far as share of urban elderly is concern. Probably it is nullified by higher longevity among urbanites, emergence of new urban centres throughout the state, better health infrastructure, averagely improved in socio-economic life etc. among urbanites, which in turn counter balance the effect of out migration from rural to urban areas.

Conclusion

Considerable improvements in the human development have led to the decline in the fertility and mortality that in turn yield to the higher share of the aged population. Hence, the state is moving towards ageing very rapidly.

Along with birth and death rates, longevity and most of the socio-demographic indicator of West Bengal have been better than the national average. Despite the larger rural population and agriculture base, inadequate urbanisation and industrialisation etc. West Bengal has been the success story at the demographic front. Currently the state compares fairly well with many high performing states like Kerala, Tamil Nadu, Punjab, Himachal Pradesh etc. Thus state deserves the special applauds.

The share of aged population to total population in the state of West Bengal was moderate up to the decade of 1981. But thereafter it has increased rapidly. In the latest census it was about 8.5 per cent and it will touch 12 in 2021. In 2021 more than 12 million elderly in the state will pose the serious challenges and opportunities before all concerned.

There are significant variations across the residence and gender in the aged population in the state. Urbanites and female elderly reports higher proportion in the total population than their ruralies and male counterparts. In order to search for better economic opportunities, huge chunks of adult population migrate to the urban area. This phenomenon should retards the percentage of elderly population in urban areas which is not true as far as share of urban population of elderly in West Bengal is concern. Probably it is nullified by the higher longevity among urbanites and emergence of new urban centres throughout the state.

Are existing policies and programmes strong enough and ready to serve more than 10 million elderly in the state, hence, it is imperative to prioritize socio-economic and health aspects of the senior citizens.

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Footnotes

1. *Population ageing or demographic ageing denotes the similar sense which refers 'rising share of elderly age cohorts in the total population' and both are used interchangeably. Ageing of population and greying of the population are also used interchangeably.*
2. *Technical advisory committee was set up by Registrar General and Census Commissioner of India in 2006. The assignment of the committee was to project the population for the 20 years for India and her States.*