Demographic Transition and Age Structure Changes in Karnataka: A District-Level Analysis

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Abstract

Population age structure plays an important role in determining the social and economic development of a region. The present study examines the changing age structure of population in Karnataka at the district level using Census data from 1991, 2001, and 2011. The study mainly focuses on the variations in child population, working-age population, and elderly population across North Karnataka and South Karnataka regions. The analysis reveals significant demographic changes during the study period. The proportion of child population has gradually declined due to declining fertility rates and increasing awareness regarding family planning. At the same time, the working-age population has increased, indicating the emergence of a demographic dividend in Karnataka. The elderly population has also shown a gradual rise, reflecting improvements in healthcare services and life expectancy. Regional disparities are clearly visible, with South Karnataka districts showing better demographic transition compared to North Karnataka districts. Districts such as Bengaluru, Mysuru, Hassan, and Mandya experienced rapid urbanization and a higher concentration of working-age population, while districts such as Raichur, Bidar, Koppal, and Gulbarga continued to have a relatively higher child population. The study highlights the need for balanced regional development, employment generation, elderly care policies, and improved social infrastructure in backward regions of Karnataka.

Keywords: Demographic Transition, Age Structure, Karnataka, Regional Disparities.

Introduction

Population is one of the most important determinants of economic and social development. The age structure of population reflects the distribution of people across different age groups and provides information regarding fertility, mortality, dependency burden, labour force participation, and ageing trends. Changes in population age structure directly influence education, employment, healthcare demand, and economic productivity. India has experienced major demographic changes during the last few decades due to declining fertility rates, increasing life expectancy, urbanization, and improvements in healthcare services. Karnataka, being one of the rapidly developing states in India, has also witnessed substantial changes in its population composition. However, demographic changes are not uniform across regions. South Karnataka districts have shown relatively advanced demographic transition, while several North Karnataka districts continue to face higher fertility, lower urbanization, and higher dependency burden. In this background, the present study attempts to analyse the changing age structure of population in Karnataka using Census data from 1991 to 2011 with a regional comparison between North Karnataka and South Karnataka districts.

Literature Review

Several studies have highlighted the importance of demographic transition and age structure in influencing economic and social development. Kingsley Davis explained that changes in fertility and mortality patterns significantly alter population composition and dependency ratios. Studies on Indian states have observed that southern states achieved demographic transition earlier compared to northern regions due to better literacy, healthcare, and urbanization. Research on Karnataka also indicates strong regional disparities in fertility, literacy, urbanization, and workforce participation. Previous studies further revealed that declining child population and increasing working-age population can provide demographic dividend opportunities if supported by employment and social infrastructure.

Objectives

1. To examine the changing age structure of population in Karnataka using Census data from 1991, 2001, and 2011.
2. To analyse the regional disparities in child population, working-age population, and elderly population between North Karnataka and South Karnataka districts.
3. To study the demographic transition and its socio-economic implications at the district level in Karnataka.

Methodology

The present study is based on secondary data collected from the Population Census of India for the years 1991, 2001, and 2011. The study uses district-level age-group population data for Karnataka. For analytical purposes, the population has been classified into child population (0–14 years), working-age population (15–59 years), and elderly population (60 years and above). Karnataka districts are divided into North Karnataka and South Karnataka regions for comparative analysis. Simple statistical tools such as percentage analysis, trend analysis, and comparative analysis have been used to interpret demographic changes across regions.

Regional Classification of Karnataka

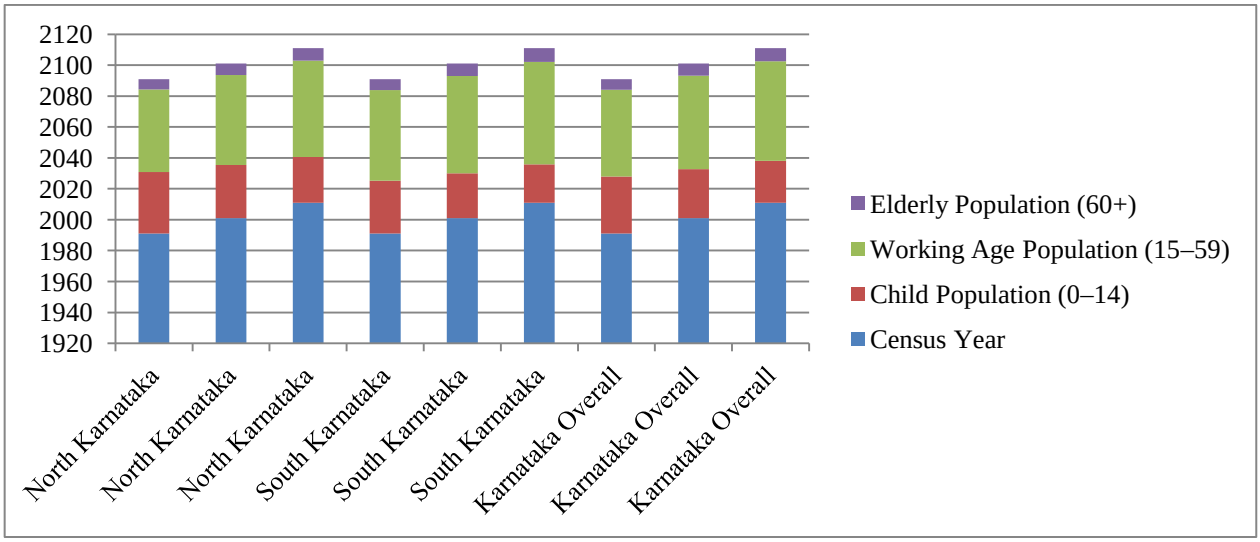
North Karnataka Districts
Belagavi, Bagalkot, Vijayapura, Bidar, Kalaburagi, Raichur, Koppal, Gadag, Dharwad, Uttara Kannada, Haveri, Ballari
South Karnataka Districts
Bengaluru, Bengaluru Rural, Mandya, Hassan, Mysuru, Tumakuru, Shivamogga, Chikkamagaluru, Dakshina Kannada, Udupi, Kodagu, Kolar, Chitradurga, Davanagere

Table 1: Regional wise Population Age Structure in Karnataka (1991–2011) in Percentage

Region	Census Year	Child Population (0–14)	Working Age Population (15–59)	Elderly Population (60+)
North Karnataka	1991	39.8	53.4	6.8
North Karnataka	2001	34.5	58.2	7.3
North Karnataka	2011	29.6	62.4	8.0
South Karnataka	1991	34.2	58.7	7.1
South Karnataka	2001	29.1	62.8	8.1
South Karnataka	2011	24.8	66.3	8.9
Karnataka Overall	1991	36.9	56.2	6.9
Karnataka Overall	2001	31.8	60.5	7.7
Karnataka Overall	2011	27.2	64.3	8.5

Source: Census of India, 1991, 2001 and 2011.

Fig. 1 Population Age Structure in Karnataka (1991–2011) in Percentage



Source: Census of India, 1991, 2001 and 2011.

Discussion and Analysis

The analysis of Census data clearly indicates major changes in the age structure of Karnataka between 1991 and 2011. One of the important findings of the study is the continuous decline in child population across all regions of Karnataka. The proportion of child population declined from 36.9 percent in 1991 to 27.2 percent in 2011 in Karnataka. This decline reflects decreasing fertility rates, growing awareness regarding family planning, increasing female literacy, and urbanization.

North Karnataka districts continued to report relatively higher child population compared to South Karnataka districts throughout the study period. Districts such as Raichur, Bidar, Kalaburagi, and Koppal showed higher concentration of younger population due to higher fertility and comparatively lower socio-economic development. In contrast, South Karnataka districts such as Bengaluru, Mysuru, Hassan, and Dakshina Kannada experienced a faster decline in child population due to better educational attainment, urbanization, and healthcare facilities.

The study also reveals a significant increase in the working-age population. Karnataka experienced growth in the productive age group population from 56.2 percent in 1991 to 64.3 percent in 2011. South Karnataka districts recorded a higher proportion of working-age population compared to North Karnataka. Bengaluru district particularly showed a strong concentration of working-age population due to industrialization, service sector growth, educational opportunities, and migration.

An increase in elderly population was also observed during the study period. The elderly population in Karnataka increased from 6.9 percent in 1991 to 8.5 percent in 2011. This reflects improvements in healthcare services, declining mortality, and increased life expectancy. South Karnataka districts reported relatively higher ageing population compared to North Karnataka districts. Districts such as Kodagu, Dakshina Kannada, and Bengaluru showed a higher share of elderly population.

The findings clearly indicate that Karnataka is gradually moving towards an advanced stage of demographic transition. However, regional inequalities continue to persist. South Karnataka districts are experiencing demographic advantages with higher workforce population and lower dependency burden, while North Karnataka districts still face challenges related to higher child dependency, lower urbanization, and socio-economic backwardness.

The changing age structure has important policy implications. Increasing working-age population provides an opportunity for economic growth and demographic dividend. However, this requires adequate employment generation, skill development,

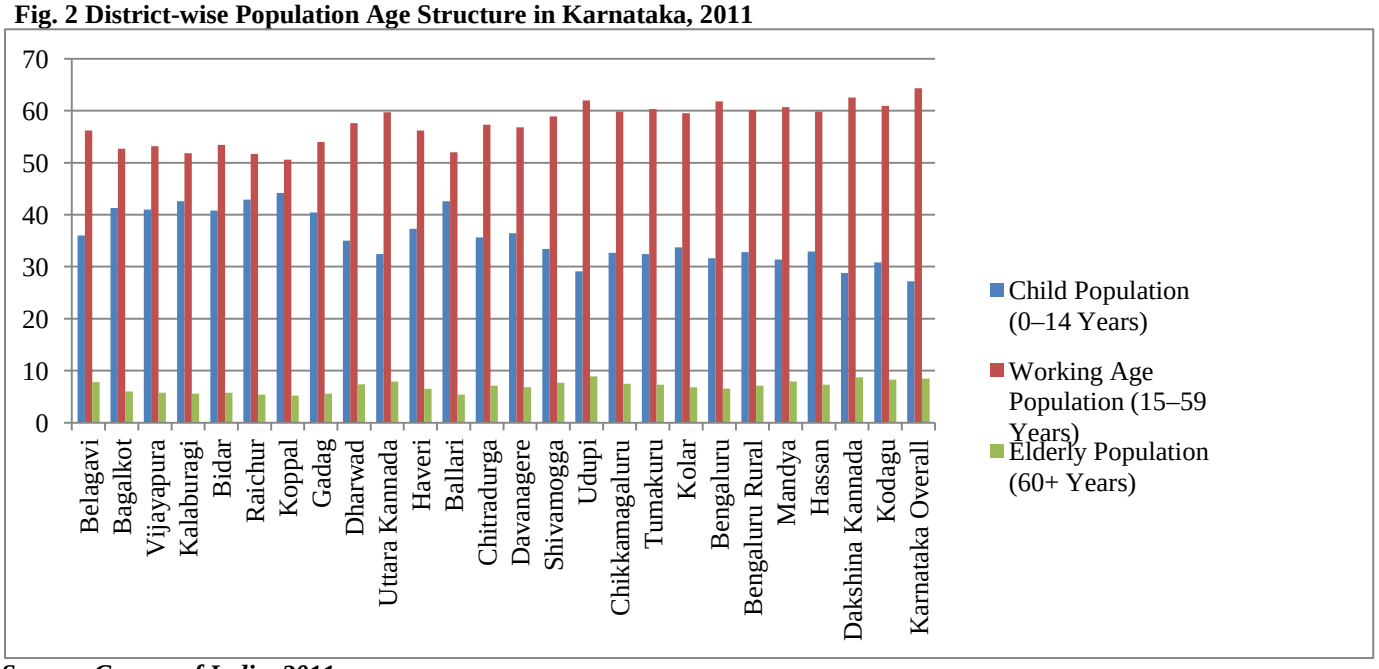
education, and industrial expansion. At the same time, the growing elderly population demands stronger healthcare systems, social security measures, and elderly welfare programmes.

Table 2: District-wise Population Age Structure in Karnataka, 2011

District	Child Population (0–14 Years)	Working Age Population (15–59 Years)	Elderly Population (60+ Years)
Belagavi	36.0	56.2	7.8
Bagalkot	41.3	52.7	6.0
Vijayapura	41.0	53.2	5.8
Kalaburagi	42.6	51.8	5.6
Bidar	40.8	53.4	5.8
Raichur	42.9	51.7	5.4
Koppal	44.2	50.6	5.2
Gadag	40.4	54.0	5.6
Dharwad	35.0	57.6	7.4
Uttara Kannada	32.4	59.7	7.9
Haveri	37.3	56.2	6.5
Ballari	42.6	52.0	5.4
Chitradurga	35.6	57.3	7.1
Davanagere	36.4	56.8	6.8
Shivamogga	33.4	58.9	7.7
Udupi	29.1	62.0	8.9
Chikkamagaluru	32.7	59.8	7.5
Tumakuru	32.4	60.3	7.3
Kolar	33.7	59.5	6.8
Bengaluru	31.6	61.8	6.6
Bengaluru Rural	32.8	60.1	7.1
Mandya	31.4	60.7	7.9
Hassan	32.9	59.8	7.3
Dakshina Kannada	28.8	62.5	8.7
Kodagu	30.8	60.9	8.3
Karnataka Overall	27.2	64.3	8.5

Source: Census of India, 2011.

Fig. 2 District-wise Population Age Structure in Karnataka, 2011



Source: Census of India, 2011.

District-wise Discussion and Analysis

The district-level analysis of Karnataka shows considerable variation in population age structure across regions. Northern districts such as Koppal, Raichur, Kalaburagi, Ballari, Bagalkot, and Vijayapura recorded a relatively higher proportion of child population. This reflects higher fertility rates, lower female literacy, limited urbanization, and comparatively weaker socio-economic development in these districts. Koppal recorded one of the highest child population shares at around 44.2 percent, followed by Raichur and Kalaburagi.

In contrast, southern and coastal districts such as Dakshina Kannada, Udupi, Kodagu, Bengaluru, and Mandya showed lower child population and a higher share of working-age and elderly population. These districts experienced faster demographic transition due to better healthcare services, higher literacy, urbanization, and improved living standards.

The working-age population was relatively high in districts such as Dakshina Kannada, Udupi, Bengaluru, Tumakuru, and Mandya. Bengaluru district particularly showed a strong concentration of productive age population due to industrialization, information technology growth, educational opportunities, and large-scale migration from other districts and states.

The elderly population was higher in coastal and developed districts such as Udupi, Dakshina Kannada, Kodagu, Uttara Kannada, and Mandya. Udupi recorded the highest elderly population share among Karnataka districts. This reflects higher life expectancy and better healthcare access in these regions.

Overall, the analysis indicates that South Karnataka districts are moving towards advanced demographic transition with declining fertility and increasing ageing population, whereas many North Karnataka districts continue to experience higher child dependency burden and slower demographic transition. These regional disparities highlight the need for region-specific development strategies focusing on education, healthcare, employment generation, and social welfare programmes.

Conclusion

The study concludes that Karnataka has undergone significant demographic changes between 1991 and 2011. The decline in child population, increase in working-age population, and gradual rise in elderly population indicate demographic transition in the state. However, major regional disparities continue to exist between North Karnataka and South Karnataka. South Karnataka districts have progressed faster in demographic transition due to better socio-economic development, urbanization, literacy, and healthcare infrastructure. In contrast, North Karnataka districts still exhibit higher dependency burden and slower demographic transformation. Therefore, balanced regional development policies, employment opportunities, healthcare expansion, and educational improvements are essential to ensure inclusive demographic and economic development in Karnataka.

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