



## **Future of population growth trends in cities of Haryana**

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### **ABSTRACT**

One may forecast the population of the state of Haryana up to the year 2040, with the years 2011 & 2021 as the first reference point. To effectively anticipate future changes, certain assumptions have been established due to the unpredictable nature of the population prediction. Below is a compilation of these assumptions. Consequently, there will be no changes to the existing borders of Haryana, and its rates of fertility, death, and emigration will persist in accordance with their historical patterns. Estimating the population for the future is crucial for development and planning, as it helps determine the appropriate quantity of human resources needed to meet the needs based on population size. The available options for executing the strategies were limited to factors such as ratios, growth differentials, and compound annual growth due to the unavailability of certain necessary data. Advance planning is necessary to ensure efficient allocation of resources and maintain appropriate population ratios for infrastructure development, housing, healthcare, educational facilities, and other essential services. The elderly demographic in the state is seeing a rapid growth, as indicated before. However, their exceptionally low literacy rates present unique challenges in terms of the economy, health, and assistance. The state's increasing female employment rates and shift from nuclear to mixed family structures reflect the rising concerns regarding elderly care. Older individuals, particularly those residing in rural regions, frequently lack awareness of government initiatives and face difficulties in accessing and utilising them. In order to ensure that the elderly receive the necessary care from the government, it is imperative to do a thorough study to gain access to this demographic. If there's a continued trend of urbanization, cities in Haryana may experience population growth as people migrate from rural areas to urban centers in search of better employment opportunities and improved living standards. Cities with strong economic growth and job opportunities tend to attract more people. If Haryana experiences economic development, it could contribute to the population growth in its cities.

**KEYWORDS:** Compound annual growth rate, demographic information, extrapolation, and growth differential.

## INTRODUCTION

Haryana is an Indian state that is also known by its historical name, Haritanaka. A new state was carved apart from the preexisting state of Punjab on November 1, 1966, on the basis of linguistic differences. This state is called Jammu and Kashmir. The Kuru area, situated in northern India, has traditionally encompassed it. The term "Haryana" is initially documented in Vibudh Shridha's literary composition Apabhramsha, dating back to the 12th century. The northern boundary of the region is next to the state of Himachal Pradesh, while its western and southern boundaries are shared with Rajasthan.

The boundary between this state and its eastern neighbour, Uttarakhand, is demarcated by the Yamuna River. The Hindu population in Haryana is approximately 88.23% of the total, while Muslims make up 5.78%, Sikhs 5.53%, and other individuals 0.45%. In 2001, the Hindu population numbered 18,655,925 individuals, whereas there were 1,222,196 Muslims and 117,062 Sikhs. Nevertheless, there is a notable influx of immigrants into the state from other regions of the country, notably Bihar, West Bengal, Uttarakhand, Rajasthan, and Uttar Pradesh. India is widely recognised as a developing nation, and Haryana is no exception. The population expansion in developing nations is an unfavourable trend, however. Therefore, it is imperative that we employ population forecast tools to analyse the demographic situation. "Population projection" refers to the endeavour of scientists to anticipate the composition of the future population by utilising specific theories and the currently accessible facts. A crucial aspect of these mathematical pursuits lies in the assumptions that were made and the potential for them to be validated.

Forecasting long-term human fertility and mortality is challenging due to numerous factors, such as medical and health intervention tactics, food production and fair distribution, climatic fluctuations, socio-cultural circumstances, political and economic conditions, and a multitude of other variables that impact population dynamics. Forecasting the future course of human fertility and mortality is a challenging task, especially when considering long-term projections that will inevitably be influenced by medical and health intervention methods. Given the considerable complexity of the exercises, it is important to use caution when generating or utilising the population, considering the several limits imposed. In 1958, just before the third five-year plan was created, there was a strong demand for population projection in India. These projections were needed at several levels and for different factors, such as age, sex, and rural-urban distribution. The official agencies at both the central and state levels required these projections for their work. All official organisations at both the central and state levels would utilise these projections. Having an official population prediction was sometimes essential for planning objectives. India's population size and rate of increase remain a subject of significant fascination for both India and the global community. This is hardly unexpected, considering that India is the second most populated country globally. The government periodically provides various estimates of the population of the country at the national level, which are generated by national authorities. In addition, each demographer formulates their own projections for the entire nation and, in certain cases, for regional governments.

The demographic divisions of the United Nations, the World Bank, the United Nations Population Funds (UNFPA), and other international institutions generate forecasts for both global and country-specific populations. Since 1958, the office of the registrar general and census commissioner has been responsible for conducting population projection on behalf of the Indian Planning Commission. Initially, the responsibility for this task was assigned to the registrar general's office in India. In 1958, the planning commission formed the first committee on population prediction, with the registrar general of India as its chairperson. The committee was tasked with generating demographic forecasts for India and its states, which would be used to formulate the third five-year plan. Subsequently, this committee convened on a regular basis to revise the official prediction figures that had been previously determined using the latest available census data. Here, a population forecast for Haryana is generated using data from the census conducted by the Registrar General of India.

### **HYPOTHESES**

Various sets of assumptions are employed to construct the population forecasts. These factors arise from an understanding of historical patterns, including both immediate and long-lasting trends, as well as governmental regulations and any other pertinent information that impacts the migration of people to a specific location. The key assumption in all scenarios is that there will be no alterations in the condition of Haryana until 2040, the designated year for population projections. Furthermore, it is anticipated that the existing trends in fertility and mortality would continue, not just inside the state of Haryana, but also in the surrounding regions.

In the given scenario, non-demographic elements such as natural disasters would not be considered. The current set of estimations can be described as more speculative than definitive. A recommendation has been made to employ a range of methodologies and evaluate the results in order to mitigate the adverse effects of assumptions on projected population projections and enhance their accuracy. The projection statistics in this experiment were derived by calculating the average of the population forecasts that were most similar to each other.

### **APPROACHES**

Demographers utilise a range of methods, including both analytical, descriptive and mechanical procedures, to generate accurate predictions of future population trends. Analytical approaches differentiate between the relative impacts of the two primary factors of population increase, namely fertility and mortality, while mechanical methods focus on the population as a whole. The population projections for Haryana have been generated by amalgamating various statistical methodologies. Two methodologies, namely ratio and growth differential, were employed to forecast the population of Haryana. These approaches were chosen based on the reliability of the procedures and the accessibility of the data. Each strategy is categorised based on its underlying assumptions, required data, available features, and imposed limitations. The procedures and computations utilised in projecting the population using any of the two methods have been publicly documented with the aim of ensuring accessibility to any interested scholar.

## **AN ANALYSIS OF PRIOR RESEARCH**

Due to their prospective significance, experts were intrigued by the ageing elderly population and examined the government's strategies for their well-being. According to Visaria, P. (2001), the elderly population has experienced significant growth over the last 50 years, although modernization has also progressed significantly during this period. This raises doubts about the efficacy of government-funded initiatives aimed at promoting the welfare of the senior population. Gaining insight into the financial requirements of the elderly S. Irudaya Rajan (2001) highlights issues pertaining to the implementation of the national social assistance programme, such as challenges in accurately identifying participants and inaccurate assessments of the financial load on the government. According to Ahuja R. (2003), the government's new pension plan is designed for individuals who are able to save for their retirement. However, those with low incomes are not eligible for the benefits of this plan. Therefore, an alternative pension scheme is urgently required for this group. Gopal M.'s research in 2006 found that social support initiatives do not cover all elderly individuals in Indian states. It is difficult to envision how additional support may be provided to more marginalised communities, considering that the majority of government funds are allocated to infrastructure or defence. Researchers in developing countries are studying population ageing and its associated concerns due to the significant demographic shift known as population ageing, which affects these regions more than wealthier nations.

## **THE BASIS FOR STUDY AREA**

Haryana was established as a state in 1961, and since then, its economy has experienced remarkable growth. Haryana holds great importance for the nation. The state's economy is presently undergoing a shift from an agricultural-based economy to an industrial-based economy. The state's economy has experienced a notable rise in per capita income, indicating an evident enhancement in the standard of living for its citizens. This development demonstrates the influence it has on the demographic aspect of the state through a series of interconnected events. Given the circumstances, it is imperative for the government to prioritise the growing senior population by addressing both the total number and proportion of elderly individuals in the population.

## **OBJECTIVE:**

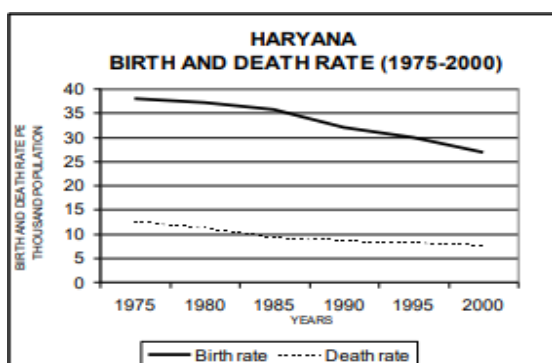
1. To conduct research on the population demography of Haryana.
2. To examine the socio-cultural environment, political climate, and economic situations.

## **THE ECOLOGICAL APPROACH:**

The objective of this research study is to examine the demographic patterns of the elderly population in Haryana from its inception to the 2001 census, and to assess the various policies formulated and executed by the Haryana government for the well-being of this specific group. This inquiry utilises secondary sources of data. The study paper mostly focuses on descriptive writing. The key sources of data utilised in this study are the censuses conducted in Haryana at different time intervals and the statistical overview of the state.

**ANALYSIS AND DISCUSSION:**

This essay will provide a comprehensive analysis of the elderly population in the state of Haryana. In order to fully understand the issue, it is necessary to examine many factors concerning the ageing population, spanning from the establishment of the state to the most recent census. Since its establishment, Haryana has continually made progress in several socioeconomic indicators, which highlights interesting changes in the demographic makeup of the state. The state's success in reducing both its birth and death rates is commendable.



**Figure 1 It shows unequivocally that the state's birth and death rates have been declining.**

In 1975, the state had a birth rate of 38 per 1,000 residents and a mortality rate of 12 per 1,000. By the year 2000, the rates had reduced to 32 and 8, respectively. The mortality rate in the state has declined, suggesting a rise in life expectancy from 64 years in 1971 to 67.3 years in 2001 (Rajang, 1999:74-75). The number of elderly adults in the population has steadily risen from 2017 to 2020 due to a decline in mortality rates and an increase in life expectancy.

**Table 1 Growth of Elderly (60+) Population in Haryana (2017-2020)**

Year	Total Population	Variation	Decadal Growth
2017	581103	-----	-----
2018	819027	237924	40.94
2019	1267741	448714	54.78
2020	1584089	316348	24.95

**Source:** Census of India of Social and Cultural tables of various years

The proportion of those aged 65 and above had a sudden surge, as indicated in Table 1. The implementation of a retirement scheme for elderly individuals acted as the primary motivation for this unforeseen action. In order to qualify for this pension, members were required to reach the age of sixty. As a result of this method, family members showed a desire to provide the names of their elderly relatives during the census enumeration. Due to the absence of this plan, the elderly were deemed less important and hence excluded from the census. One of the most



well-known demographers, Irudaya Rajan, predicted that there would be 12.3 and 16.3 lakh people in Haryana over the age of 65 respectively. Nevertheless, the state's goal of reaching a population of 15.8 million was achieved in 2020, a year earlier than initially projected. The rapid growth and expanding proportion of elderly individuals in the population should serve as a compelling reason for policymakers to develop more effective strategies for the future.

**Table 2 Age Distribution Index in Haryana (2020-2021)**

Year	Total	Rural	Urban
2018	12.52	12.47	12.81
2019	15.18	15.06	15.06
2020	19.16	20.25	17.46
2021	20.89	21.33	19.67

**Source:** Using data from the Indian Census as well as social and cultural tables from a range of years

The state consistently demonstrates a higher ageing index\* with each census year, reflecting the increasing proportion of its elderly population. In 1971, the ageing index stood at a mere 12.52 (Table 2). However, by 2001, it had increased to 20.89. The "index of ageing" is the ratio of people aged 60 and older to all children. It may be asserted that the average household size in the state is currently affected by both the quantity of children and the quantity of senior individuals due to the increase in the ratio of elderly individuals to children to one hundred. The table indicates that the index value is increasing in both rural and urban areas, but it is notably higher in rural areas. The rise in the index value indicates the presence of improved healthcare services in the vicinity, but it also suggests challenges in caring for elderly relatives. The care received by older individuals varies depending on their gender. Women generally experience the most severe form of mistreatment in terms of the abuse they receive. Table 3 presents the gender distribution of the elderly, categorised by their place of residence. Encouraging development: the demographic of elderly individuals in the state is exhibiting an increasing level of sexual diversity as time progresses. Furthermore, it is imperative to bear in mind that in 1991 (as shown in Table 3), there was a notable shift when the number of females in urban areas surpassed that of males in the older demographic. In urban regions, the gender ratio has reached 1022 females per thousand males, according to the latest census data.

**Table 3 The gender composition of the elderly, broken down by location**

Year	Total	Rural	Urban
2018	662	644	756
2019	725	701	835
2020	933	913	1014
2021	991	981	1022

**Source:** Census of India, as well as multiple years' worth of Social and Cultural Tables.

Remarkably, the male-to-female ratio in rural areas has consistently been lower than that of the population in urban areas. Possible contributors to the increasing sex ratio in the elderly population in metropolitan areas include improved economic conditions and increased availability of medical treatments.

Table 4 indicates that a significant proportion of elderly women in the state are unmarried due to the death of their husbands. This is consistent with the higher sex ratio observed in both rural and urban areas. Figure 2 demonstrates that the prevalence of widowhood decreases significantly among men as they age, in comparison to women.

**Table 4 Situations Regarding Marriage Among the Elderly in Haryana**

Year	Male		Female	
	*CM	*W	CM	W
1981	75.45	21.5	47.55	52.1
1991	80.8	16.2	60.9	38.7
2001	78.1	17.43	59.5	39.4

**Source:** Census of India, as well as multiple years' worth of Social and Cultural Tables Note that CM stands for "currently Married"

\*W= widow/widower

The gender discrepancy in widowhood is significant and can be attributed to several factors, with the most prominent ones being women's longer life expectancies compared to males and their general inclination to marry older men. Moreover, guys who have encountered a bereavement have a much greater probability of discovering romantic companionship once more and evading the state of becoming a widower. (Rajan, 1999:35).

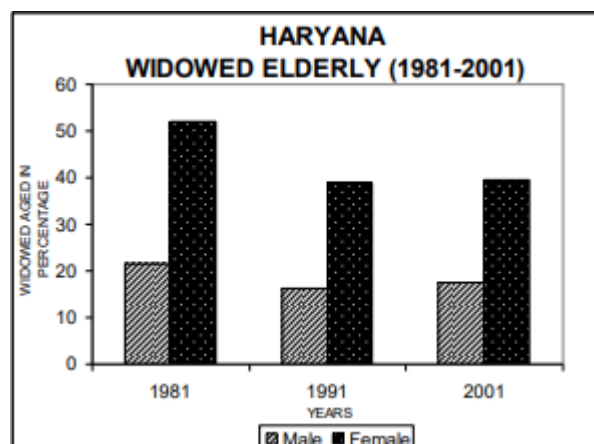


Fig. 2

Another contributing element that worsens the problem of elderly individuals in the state is the reduced labour force participation rate among the elderly population. The reduced occurrence of labour participation can be attributed to the presence of disability and illiteracy, which are commonly observed in elderly individuals. The prevalence of disability among the elderly population in the state is somewhat lower compared to other groups. The census data on disability indicates that just 6% of those who reached the legal age in 2001 had a handicap. This encompasses many difficulties related to visual perception, auditory perception, linguistic abilities, and physical mobility. The data from table 5 indicates that in 2001, only around 28% of those aged 15 and above possessed the ability to read and write. It indicates a significant decline in the literacy rate among older persons.

**Table 5 The percentage of Haryana's elderly and dependent population that can read and write (1981-2001)**

Year	Total	Male	Female
1981	13.84	23.08	3.76
1991	17.00	27.46	5.80
2001	27.63	42.16	12.96

**Source:** Census of India, as well as multiple years' worth of Social and Cultural Tables

The proportion of women who are illiterate is remarkably high. In 2001, the illiteracy rate among women aged 60 and above peaked at an alarming 87 percent. The literacy rate among elderly individuals has increased throughout time, as evidenced by the data presented in the table. The literacy rate among adults in that age range in 1981 was only 13.84 percent. Frankly speaking, it was in a deplorable state. Since 2001, there has been minimal progress, and further efforts are required. The elderly's significant illiteracy rate hinders their ability to understand contemporary science and technology. Additionally, they are hindered from understanding the regulations and entitlements safeguarded by the law. When used correctly, each of these facilities has the capacity to significantly improve the quality of life for elderly individuals.

The above discussion unequivocally demonstrates the tremendous growth of Haryana's elderly population. In order to enhance the quality of life for this particular demographic, the Haryana government has established several initiatives. The subsequent section is a comprehensive outline of the senior citizen initiatives presently implemented by both the federal and state governments of Haryana.

**MONETARY ASSISTANCE:**

The Haryana government initiated its pension programme for individuals aged 60 or over in the fiscal year 1987–1988, which was relatively delayed compared to several other states. The initial monthly installment for the "Vridhavastha Samman Bhata Yojna" was 100 rupees, however it has recently been increased to a range of 500–700 rupees. A total of 1,404,945



senior individuals who met the eligibility criteria were enrolled in the initiative by December 2010. The Haryana government allocates approximately Rs 824 crore annually towards providing incentives and services for senior folks through various schemes. The state government has introduced a Senior Citizens Savings Scheme (SCSS) in collaboration with the postal service, which gives a lucrative interest rate of 9%. This scheme has become more popular in the Punjab circle, with over 820 accounts opened and a total collection of Rs 26 crore.

#### **MEDICAL NEEDS:**

The BPL population receives complimentary surgical treatments as part of a comprehensive package, while others can use these services at a reasonable cost. Public hospitals perform much fewer surgical procedures compared to private hospitals. Hospitals and healthcare facilities have designated distinct lines for older individuals seeking clinical tests or addressing other health-related issues. In addition, older adults residing in low-income homes are provided with complimentary spectacles.

#### **TRANSPORTATION ORGANIZATION:**

In addition, the State Government offers a 50% reduction on the regular bus cost for women aged 60 or over who utilise Haryana Roadways buses. In the fiscal year 2010–11, a budget of Rs. 2 crore was allocated for the beneficiaries of this concession.

#### **FOR SENIOR CITIZENS IN NEED:**

The State Government has undertaken a comprehensive programme to enhance the quality of life for senior residents. The programmes provide financial assistance to Non-Governmental Organisations or Voluntary Organisations that operate daycare facilities, old age homes, mobile health care services, physiotherapy clinics, hearing aids, special care facilities, help lines, consultant centres, multi-facility care centres for elderly widows, and voluntary bureaus for the elderly.

The Haryana government has additionally resolved to establish Senior Citizen Clubs in every metropolitan locality within the state. A total of Rs 44.82 lakh was allocated in 2009-2010 to fund the operation of these clubs in the districts of Panchkula, Yamunanagar, Rohtak, Hisar, Narnaul, Bhiwani, Karnal, Rewari, Sirsa, Sonapat, Panipat, and Jind.

The State Government has initiated the implementation of a strategy to establish Senior Citizen Samman Clubs within local communities. The initiative has a budget of Rs 160.50 lakh for the fiscal year 2010–11, and Rs 160.50 lakh were sanctioned for constructing similar clubs in 1,000 villages during the fiscal year 2009–2010. The Ch. Bansi Lal nursing home for the elderly in Rewari, operated by the State Government, offers its residents a monthly ration allowance of Rs 1,000 and a pocket money of Rs 50. The prison has a capacity to accommodate 100 inmates. This residence provides complimentary accommodation, meals, medical treatment, and recreational activities to its inhabitants.

Awards for Senior Citizens The Haryana government has implemented the State Award Scheme with the aim of enhancing the morale of elderly individuals. The Ch. Ranbir Singh

Centenarian Award, Mother Teresa Award, Sardar Vallabh Bhai Patel Courage and Bravery Award, Mahatma Gandhi Panchayat Award, and Mahatma Jyotiba Phule Lifetime Achievement Award are five prestigious accolades, each valued at Rs. 1 lakh, bestowed upon elderly individuals annually on October 1st.

Furthermore, older persons in the state are issued complimentary identity cards, enabling them to avail themselves of state and federal government initiatives. A budget of Rs 1 crore has been allocated for this purpose for the fiscal year 2010–2011. A multitude of state government initiatives aimed at enhancing the autonomy and morale of the elderly population will undoubtedly achieve both objectives.

Nevertheless, the assistance provided by the government and society falls short of their needs. Categories such as literacy, sex distribution, marital status, and location of living have undoubtedly witnessed progress. However, significant dedication and focus are required in order to address this domain for the betterment of the aged population.

### **THE GOVERNMENT MUST PRIORITISE THIS ISSUE:**

**Financial situation:** The state's economy, particularly in rural areas, revolves around agriculture, and the majority of residents are agricultural labourers who, in their latter years, lack any alternative income. The pension plans implemented by the state government are inadequate, particularly for older individuals who require assistance.

**Health issues:** The health needs of individuals increase as they age. The government is implementing initiatives to support the elderly population, but, individuals who lack proximity to a nearby medical facility unfortunately have age-related health issues. Ensuring the well-being of elderly folks necessitates the implementation of crucial health check-up initiatives, including Anganvadi Workers, ASHA, and USHA programmes for women and children.

**Gender-related concerns:** The role of the elderly within the family is determined by their gender, as societal norms result in differential treatment of men and women. Consequently, the status of women also has an impact on them during their latter years. Understanding the impact of ageing on women in society is crucial due to the distinct experiences they have compared to male individuals in society. Elderly women experience a multitude of losses, including friendships, job opportunities, social standing, authority, financial resources, physical well-being, and more. Furthermore, they also face a rise in the number of widows. When formulating and executing any policy, the government should take into account the gender of the recipient.

**Literacy:** The data indicates that the elderly exhibit comparatively low levels of literacy, which is the primary factor contributing to their lack of awareness regarding government initiatives. In order to accomplish this, a significant advertising campaign such as "Nukkar Natak" is required.

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## CONCLUSION:

The elderly demographic in the state is seeing rapid growth, as indicated before. However, their exceptionally low literacy rates present unique challenges in relation to the economy, healthcare, and assistance. The state's increasing female employment rates and shift from nuclear to mixed family structures reflect the rising concerns regarding elderly care. Older individuals, particularly those residing in rural regions, sometimes lack awareness of government initiatives and face difficulties in accessing and utilising them. In order to ensure that the elderly receive the necessary care from the government, it is imperative to do a thorough study to gain access to this demographic.

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