



An In-Depth Study on the Effect of Increasing Geriatric Population on Public and Private Sector Investments in India: Interregional and Intertemporal Analysis

Sana Gupta

Heritage International Xperiential School (HIXS), Gurgaon, India

sanaint10313@hixs.org

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Abstract

Longevity and geriatric demands are increasing throughout the world, particularly in developing economies like India. India is peculiarly positioned as although the extent and magnitude of the country's demands is acknowledged, resultant private and public investments/schemes have been revealed to be vastly inadequate to address this huge rural-urban aged population. Ideally, the solution lies in a concerted effort from all stakeholders to combat this myriad issue. Addressing this issue in India, however, becomes even more complex when interregional variations in poverty levels, extent of rural poor and urban poor, GDP, provisions and such are factored into consideration. Moreover, mitigating the challenge of interregional differences is not easy. Although the private sector is given the opportunity to enter into a sphere where it can present an opportunity to increase employment and income, helping to achieve various macroeconomic indicators, urban-rural disparities may put several demographics at an even greater disadvantage. From the point of view of the public sector, the government must be proactive in not only announcing policies but also implementing them at the grassroot level with a consideration of interregional variation, which is extremely difficult to achieve considering opportunity costs, limited budgets and known disparities.

Keywords: *Demographic Transition; Life Expectancy; Dual Edged Challenge; Increasing Geriatric Population; Disparities in Government Capacity; Public and Private Sector Investment*

1. Introduction

India, now the world's most populous country and the fourth-largest economy (Times of India, 2025), stands at the cusp of a drastic demographic transition in 2025. Whilst 65 percent of its population is under 35 (Business Today, 2024) today – a driving force for its 'demographic dividend' - recent trends have indicated a sharp uptick in the geriatric population. Life expectancy has risen sharply to 70.8 years

(World Health Organisation, n.d.), reflecting economic growth and advances in healthcare. Fertility rates have now dipped below the replacement level of 2.1 (King, 2025), indicating that the population is aging. According to the Longitudinal Ageing study in India (LASI), the share of the elderly in the population will rise from 8.6 % in 2011 to 19.5% outnumbering the 0-15 years age group (International Institute for Population Sciences, 2020). While the current population of 150 million is already significant, larger than the population of Russia as a reference point, the increase to around 319 million by 2050 has significant socio-economic implications (International Institute for Population Sciences, 2020), budding the title ‘the greying country’.

The theory of demographic transition offers a valuable lens through which to view changes in the senior population. 5 distinct stages characterize it (Socio Health, 2024):

- 1) High birth and death rates: India was in this stage until 1921.
- 2) High birth rate and falling death rate: India was in this stage until the 20th century, thanks to improvements in medical facilities, healthcare, agriculture, and economic development.
- 3) Falling birth and death rates: Current. The population is increasing at merely 1% per annum.
- 4) Low birth and death rates
- 5) Fertility decreases below replacement levels

India as a whole is imminently transitioning from stage 3 to 4, marked by decreasing fertility, increased life expectancy, and a rise in the median age of the population. Naturally, this has vast agricultural, environmental, and social ramifications. Although, this transition is not wholly uniform across states. Fertility, birth, and mortality rates vary interregionally, which means that some states appear to be in the early stage 4 of Demographic Transition Theory, while others are at an early stage 3, late stage 3, and so on. The presence of such demographic variations underscores the need for region-specific analyses when studying the impact of aging on investment patterns, resulting in more informed policy-making.

Regardless, uniformly across the country, the longevity of the elderly has increased. This is clearly shown in the images below.

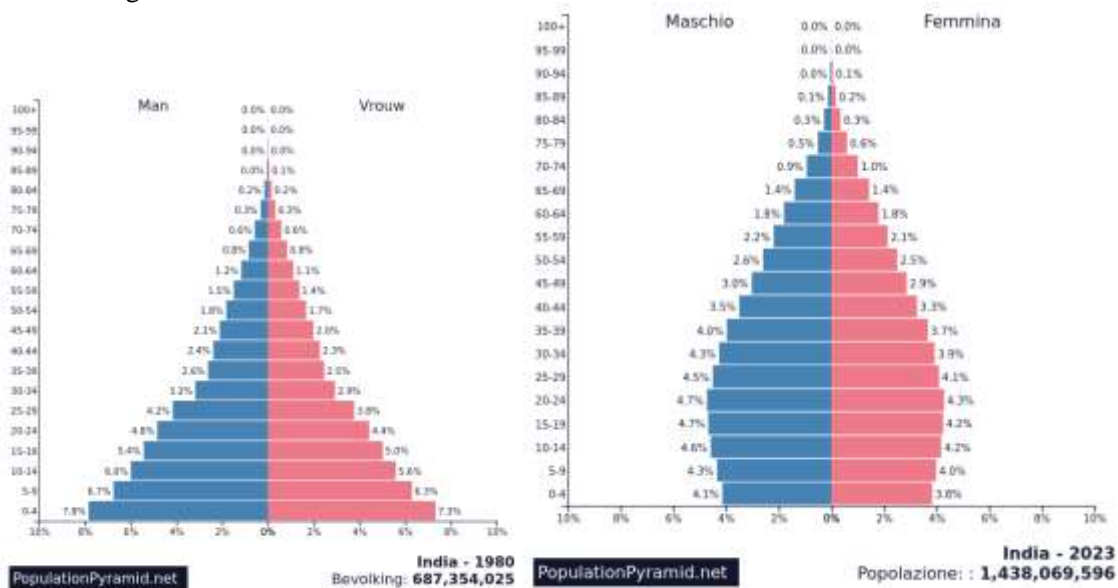


Figure 1A, 1B: Contrasting images of the demographic pyramid of India in 1980 and 2023
Source: PopulationPyramid.net

Both the figures above clearly indicate that there has been a visible difference in the decline of the age group 0-15 years. The independent population has increased, and so has the tip of the pyramid, namely the age group 59 years and above. This is in synchronization with the declining birth rate as well as the declining rate of growth of the population. The implications of this are vast. This demographic transition presents a dual-edged challenge. On one hand, a growing elderly population will require extensive care infrastructure, including medical and social support. Moreover, increased longevity and declining fertility result in a higher elderly dependence ratio, posing an economic burden on the working population and prospective health issues for seniors themselves. Conversely, this increasing geriatric population implies a rapidly growing market segment ('The silver economy'), creating potential for much-needed private sector investment in healthcare, insurance, pharma, eldercare, and senior-friendly housing. Moreover, the government and public sector are forced to develop their own services to address this growing populational pressure, which is currently lacking despite the various measures taken.

Currently, India's public healthcare infrastructure, social security systems, and established provisions/schemes targeted toward geriatrics are inadequately addressing the specific needs of an ageing population as a result of various factors. Although programs such as the NPHCE (National Programme for Health Care of the Elderly) and pension schemes like IGNOAPS (Indira Gandhi National Old Age Pension Scheme) provide some support, coverage, and quality across poorer and rural regions remain limited, raising concern as approximately 40% of the elderly in India are amongst the poorest wealth quintile (Press Trust of India, 2023). This hindered coverage and quality stems from mass levels of corruption, insufficient budget allocations and attention, shortage of trained manpower, inclusion gaps, and disparities in governance capacity. Simultaneously, the government is only beginning to address these growing demands in the form of the growth of retirement communities, specialized insurance products, health technologies, and home-based care services, although these tend to be concentrated in urban and wealthier parts of the country.

Given these pronounced demographic disparities amongst various regions and Indian states, it is vital to examine how different regions are responding to aging populations in terms of both public and private sector investments. Ideally, the policy measures that have to be adopted by the government will need to address the changing demographic structures. They should focus on the provision of jobs for the independent age group, 16-59 years, and should take advantage of the aforementioned demographic dividend. The government also needs to address the issues of the age group 60 years onwards. Some of these could be in the form of health, both mental and physical, source of income, insurance, safety etc. Given the limited amount of resources that are available with the government, they need to have a fair division between the age groups 0-15 years and 60 years and above (Both being dependent populations). As the numbers increase in the age group 60 and above, there has to be a concerted effort by both the government and the private sector to address the needs of this group. The private sector on its own may not be able to fully provide for all the citizens; the lead has to be taken by the public sector. This could be in the form of provision of basic infrastructure, help in finance, as well as policies that help the aged population to cater to their old age. The provisions should be provided by both the buyer and seller, with respect to all facilities that would help the geriatric population.

2. Research Gap

Despite the vast national body of work pertaining to geriatrics, there are various gaps in the literature. **First, public and private investments vary across states, as does demographic transition.** Need for interregional specificity, in terms of understanding aging and investment processes. **Second,** exploring *how investments in geriatrics have changed over time to match the rapid pace of demographic transition.* **Third,** commenting on the *supplementary relationship between public and private sector investments.*

To fulfill these gaps, this paper will thus attempt to understand:

- The problems being faced by the increasing percentage of elderly in India, and whether the magnitude or type of problems vary vastly per state.
- The response of the: a) private and b) public sector interregionally.
- How has this response changed over time.
- Social and economic ramifications: Impact of increasing percentage of elderly on the independent workforce in India, change in the joint family fabric of the Indian economy

3. Methodology

The analysis would be both qualitative and quantitative. For quantitative analysis, authentic secondary data would be used. Graphs and other representative tools would be used to indicate the impact over time and across regions of the increasing geriatric dependent population. As far as investments are concerned, there would be two major areas, mainly public investment and private investment. Per the investigation of public spending, various schemes that include healthcare, support of the elderly, housing, and preventive care would be analyzed. With respect to private investment, increasing interest by private firms in the provision of community home spaces with complete medical facilities would be analyzed, time and across regions.

4. Overview

The term geriatric population quite simply refers to individuals aged 60 years and above (although institutions like the WHO use 65+ in international contexts) (United Nations). This 60+ threshold is used for official schemes, census data, and established policy frameworks, inclusive of prominent policies like NSAP (National Social Assistance Program) and IGNOAPS (Indira Gandhi Old Age Pension Scheme).

Moreover, other useful concepts and metrics include:

- 1) The ‘silver economy’ refers to economic activities, services, and products catering to the elderly demographic (Clear IAS, 2023)
- 2) Active ageing: Framework posited by the WHO, emphasizing and fostering the optimization of longevity, participation, and healthcare.
- 3) Aging index: Calculated as the number of people aged 60+ per 100 children under 15. States like Kerala have an aging index over 70, indicating a rapidly aging society, while Bihar’s remains below 30.
- 4) Elderly dependency ratio: The number of elderly per 100 working adults.

These concepts are integral to understanding the policy urgency, investment shifts, and understanding of the variable interregional nuances of demographic transition required to address aging-related needs. Indian public policy literature has a primary focus on exploring the extent and magnitude of the problems faced by the elderly, including (Vaishnav et al., 2022):

- Economic issues: Inadequate monetary support, financial instability, coupled with increased medical expenses, lead to physiological and psychological detriments of the elderly.
- Physiological issues: As age increases, the tendency to be mentally impacted by adverse situations increases, and if the people in this age group have limited access to financial independence, the problems exacerbate.

- Housing-related issues: As one ages, the environment with respect to where one lives has to change in a manner that is more accessible, welcoming, and livable. In India, the concept of a joint family plays a very important role in caring for the elderly. Although with increasing ‘nuclearization’ of families, acceptance by the elderly has become increasingly difficult. This could further have a detrimental impact on their health.
- Crimes against aged persons: This age group is extremely vulnerable to crimes such as murder, extortion, digital crime, etc.

In fact, these issues are getting progressively more severe as the geriatric population increases. The Longitudinal Aging Study in India (LASI, 2020) reveals that nearly 60% of elderly individuals suffer from chronic ailments (International Institute for Population Sciences, 2020), while over half lack any pension or stable income, exacerbating the elderly dependency ratio. This insecurity is even more pronounced in rural regions of India, particularly against women. Comprehensive studies carried out by the NSSO (National Sample Survey) and HelpAge India align with these findings, underscoring the pressing need for social protection coverage.

As a means to tackle this, several policies, as aforementioned, have been established, primarily targeted at healthcare and financial support. Although the efficacy of these schemes is scattered at best. For instance, the Indira Gandhi National Old Age Pension Scheme (IGNOAPS), implemented to assist BPL (Below Poverty Line) citizens aged 60+, aimed to target the issue of inadequate monetary support via providing a monthly pension to seniors, the success of which was limited. Firstly, a *lack of strict policy enforcement* in terms of eligibility of beneficiaries in combination with corruption meant that in 14 States, the IGNOAPS pension of ₹ 30.47 crore was paid to 57,394 ineligible persons who were less than 60 years of age, per an audit done by the government itself (Comptroller and Auditor General of India, 2023). Even more disappointingly, due to fixed caps of the scheme, applications for old-age pensions *have not been accepted since 2018*, leaving many without financial support altogether. Moreover, the limited amounts offered (₹200 for 60–79 years, ₹500 for 80+) (Acharya M, 2025); state provisions in addition to this meagre amount are variable, meaning seniors are financially compromised.

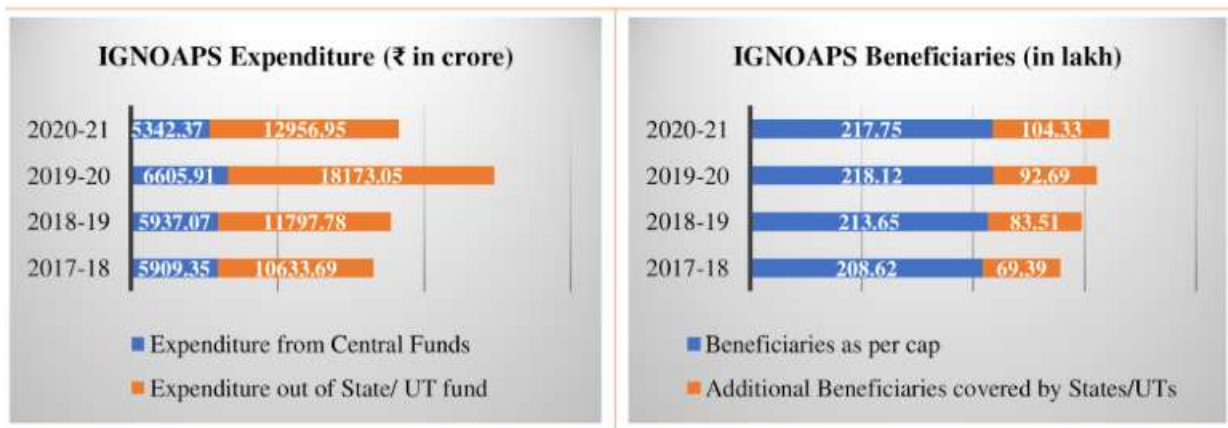


Figure 1 - Timeline of IGNOAPS expenditure (Comptroller and Auditor General of India, 2023)

This pattern is broadly followed across other schemes, pointing toward *systemic failure in supporting India’s elderly population* today, as they are growing in number rapidly. These policies must thus overcome known *challenges in corruption and inequitable enforcement*, and also acknowledge that the issues in addressing the geriatric population in developing and developed economies are completely different. *These issues are more prominent in developing countries as most of the economies have to cater to both types of dependent populations: one in the age group 0-15 years (whose trend is declining) and simultaneously that of the age group 60+ years (whose trend is increasing).*

The vast, existing body of research on the healthcare of developed economies (Thinley, 2021) have indicated that with longevity, there has to be a simultaneous increase in control of diseases, a choice between ageing at home or in a community and prioritising the health support system for the geriatric. The provision of healthcare by the government becomes an important security factor for this section of the population. *Not only does the government have to provide healthcare, but it also needs to adequately publicize it so that the adult population has a level of awareness about the available policies and thus can take advantage of them.*

5. Collection of Data and Information: Across States

a) Interregional variations

Nationally, geriatric population growth is not uniform across states. While the overall elderly population has increased from around 8.6% in 2011 to 10.5% in 2023 (Press Information Bureau, 2023), notable interstate disparities dominate. Some states, such as Kerala, Tamil Nadu, Goa, Punjab, and Himachal Pradesh, have fertility rates below the replacement level (total fertility rate [TFR] < 2.1) (Rana, 2025) and low mortality rates, consistent with Stage 4 characteristics, indicating the population has achieved replacement rate or is slightly below the same. These states also report high percentages of elderly residents, some exceeding 15% (Statista, 2025), indicating a faster rate of ‘greying’. Conversely, many other states—mainly in northern and central India, including Bihar, Uttar Pradesh, Madhya Pradesh, and Rajasthan (Rana, 2025)—remain in Stage 3, with higher fertility rates (TFR > 2.1) and relatively younger populations, with the geriatric population hovering well below 10% (Statista, 2025). These states are still experiencing moderate population growth and are in earlier phases of the demographic transition.

These differences lead to different demands for services like pensions, healthcare, relevant infrastructure, social support, and eldercare services. Kerala’s elderly dependence ratio is well over 15% currently, projected to reach around 34.3% (Kumar & Social Justice Department, 2024), whereas the all-India average hovers around 10% (Trading Economics). This implies a higher economic burden on the working population, indicating the pressing need for higher per capita public and private investments in eldercare. Likewise, fiscal capacities are also influenced and biased by demographic variation. States like Bihar, which are seeing rapid increases in geriatric population growth, are unable to cope with increasing demands due to their low per capita income, which also limits budget allocations for pensions and healthcare, producing a vicious cyclical effect. Most notable is the prevalent urban-rural disparity. *Urban elderly, in most cases, have better access to required facilities, while rural elderly face shortages of trained medical personnel and institutional support, complicating equity.*

These interregional differences are vast; however, the most important are:

- State development on the basis of GDP, infrastructural development and such.
- GDP of the state.
- Fertility rates in urban and rural areas for different states.
- Disbursement of funds by both center and state for geriatric care.

Kerala, for instance, is positioned in the *upper bracket as a result of its demographic maturity and strong infrastructure*. Moreover, it showcases a low fertility rate of 1.5-1.7 (Decreasing pattern from figure of 1.8 in 2019-2020) (International Institute for Population Studies, 2020) and an elderly population of 16.5% (Far above the national average of 10%), representing the pressures of an aging society. Leading geriatrics scholar S. Rajan has stated that “Kerala is becoming a land of old-age people,

and naturally it is evident in the voters' list too. In some districts, one out of five voters is a senior citizen. In Southern districts like Pathanamthitta, this would go up to four out of five.” (Arun M, 2024)

Consequently, geriatric care and policy have begun to take precedence. Despite a moderate GDP of 14.27 lakh crore (PRS Legislative Research), the state endorses *NPCHE* centers, palliative services, *Vayomithram outreach*, old-age homes, and integrated geriatric services at primary healthcare levels, which is rarely seen in the nation so far. Even so, a striking gap exists between growing demographic demand and fiscal responses. First, reported disbursements for elderly care barely scratch the surface of growing needs. Moreover, delayed reimbursements by the *KASP (Karunya Arogya Suraksha Padhathi)* - Kerala’s health insurance scheme - have amounted to 1600 crores total (see State Health Agency, Government of Kerala), creating strain on public hospitals and thus elderly care. Diverse demographics within Kerala are also underrepresented. While urban regions like Kochi and Thiruvananthapuram benefit from strong infrastructure, rural and tribal populations continually face barriers to accessibility and affordability, despite generally strong public health.

Maharashtra, as another case study, is *in the middle bracket*. At a TFR (Total Fertility Rate) of 1.7 (Rana, 2025)- far below the replacement rate - and as the third largest Indian state, it considerably contributes to the nation’s aging population. Despite a definite propensity and fiscal capacity to invest in welfare programs, healthcare facilities, and keep up with the evolving needs of an *increasing geriatric population, existing schemes are hindered by pronounced urban-rural gaps, a shortage of specialists, limited infrastructural capacity, and similar issues*. For example, the *Shravan Bal Seva Rajya Nivrutti Vetan Yojana* - a Maharashtrian pension scheme - has much room for improvement. ₹600–₹1500/month increments are often insufficient, if provided at all, considering fragmented implementation and lack of awareness (see Social Justice and Special Assistance Department, Government of Maharashtra).

Another perspective to consider is that of *Bimaru (Laggard) states*, namely Bihar, Madhya Pradesh, Rajasthan, and Uttar Pradesh, which fall behind in most macroeconomic aspects.

State	Bracket	GDP (lakh crore rupees)	Fertility rate	Geriatric ratio
Bihar	Lower	9.52	2.9	7-8%
Maharashtra	Middle	44.05	1.7	11-12%
Kerala	Upper	12.32	1.5	15%

Table1: Development magnitudes for Indian states (see NITI Aayog, 2024; GDP of Indian States, Statistics Times, n.d.)

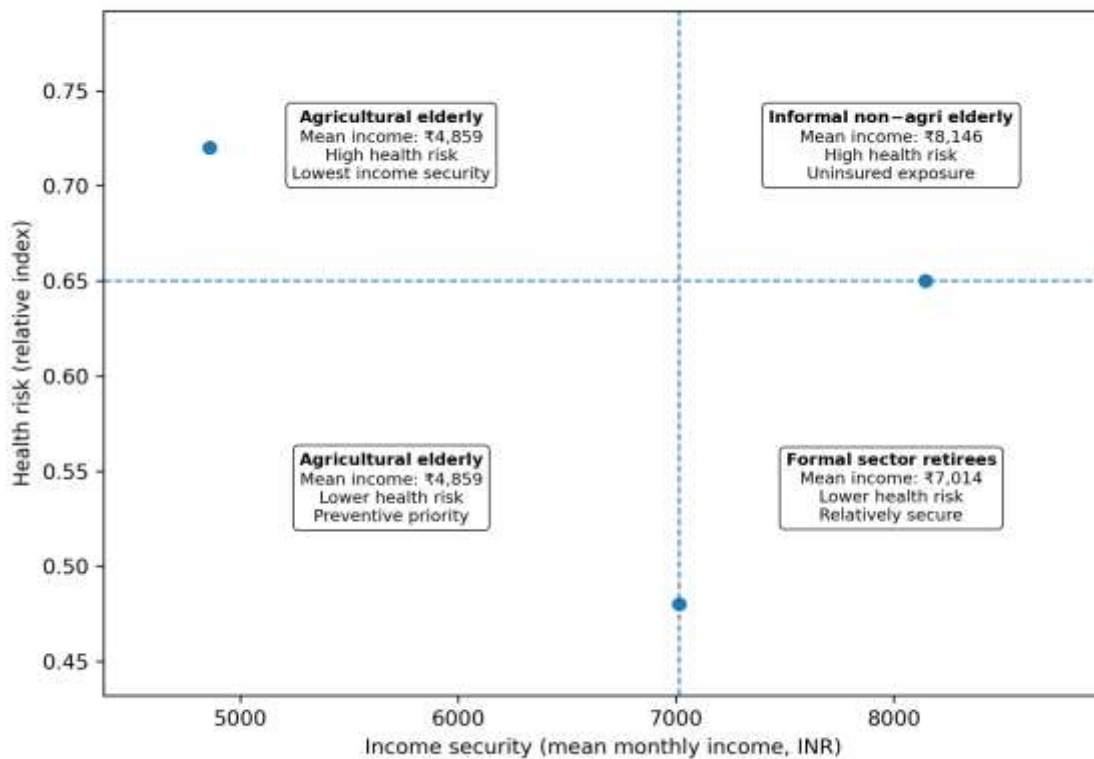
Private sector, a response to ‘the silver economy.’

The goods and services consumed by the elderly, or in other words, the silver economy, is already estimated at *Rs 73000 crores* (see NITI Aayog, 2024), *or \$7 billion in 2025, and growing*. These economic opportunities span across *real estate, healthcare, packaged food, financial services, travel and entertainment, and communication*. Both large businesses and start-up entrepreneurs have sensed this opportunity, and product and service innovations abound, from *gut-friendly and high protein packaged foods, to age tech products, senior living carefully designed for seniors, sensor-based tech products for crisis response, healthcare and service on demand to wellness, and travel and entertainment services for elders*.

The challenges remain with the scale, affordability, quality of standards, and cultural appropriateness of the offerings given India’s diverse social norms and uneven distribution of incomes.

In 2017-18, *Longitudinal Ageing Study in India (LASI), Wave-1 (2017–18)* (see *International Institute for Population Sciences (IIPS)*), a nationally representative survey of adults aged 45 years and above, covered over 31,000 elderly individuals (60+ years) across all states and union territories of India. LASI provides detailed information on income sources, employment history, health conditions, healthcare utilization, and social protection coverage among older adults. Analysis of LASI indicators reveals pronounced variation in vulnerability based primarily on **lifetime employment history rather than the conventional view of rural versus urban divide based on place of residence**. Elderly individuals originating from agricultural and informal non-agricultural employment exhibit substantially lower income security, limited access to pensions and insurance, and higher exposure to health risks compared to formal sector retirees. The following figure presents a quadrant analysis plotting income security against relative health risk.

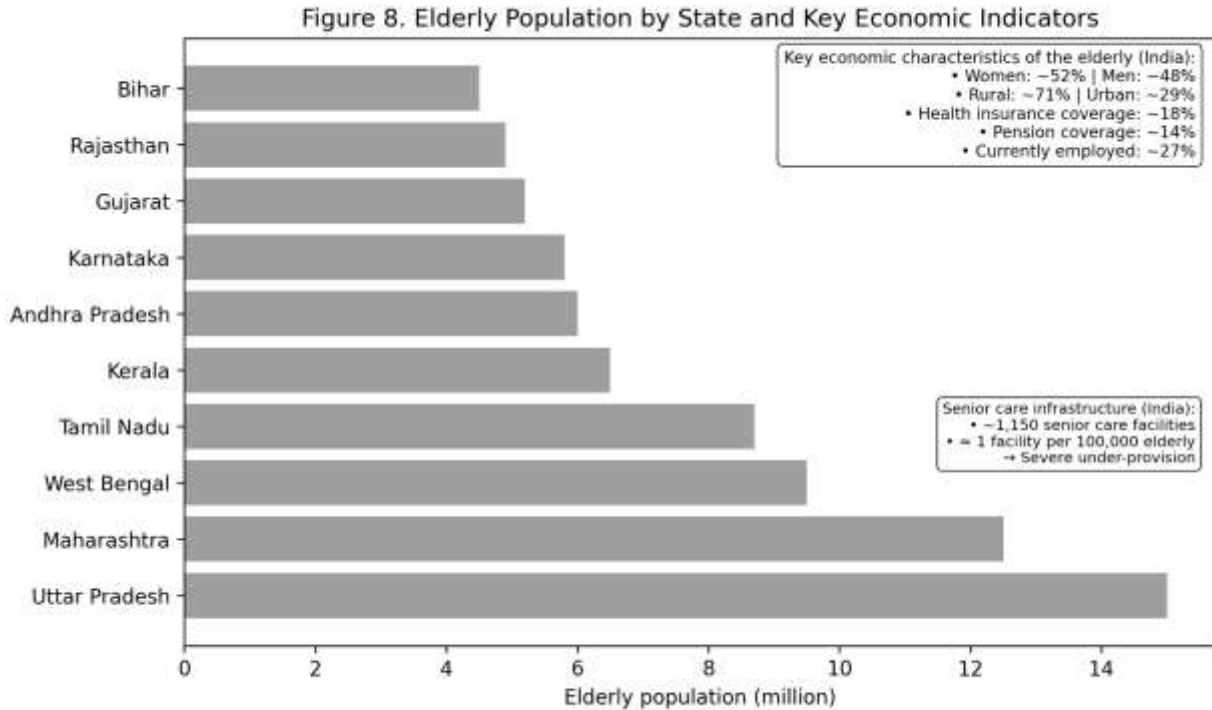
Figure 7. Income Security x Health Risk: Vulnerability Quadrant for Elderly



Source: Author’s analysis based on Longitudinal Ageing Study in India (LASI), Wave-1 (2017–18). Income refers to mean monthly individual income by employment history. Health risk is a relative index constructed from reported chronic conditions and functional limitations.

Figure 7 groups elderly people by income security and health risk. Agricultural elderly fall in the low-income, high-risk quadrant and are the most vulnerable. Informal non-agricultural elderly have somewhat higher incomes but remain exposed to health shocks due to weak insurance and pension coverage. Agricultural elderly with lower health risk form a priority group for preventive healthcare. Formal sector retirees are relatively better protected. *Overall, the figure shows that elderly vulnerability is shaped mainly by employment history, not by location, and cannot be addressed by market-based solutions alone.* Clearly, many elderly people have low incomes and high health needs, especially those who worked in agriculture or informal jobs and therefore, the government must step in to provide pensions, affordable healthcare, and financial protection where private systems cannot.

Take the example of senior care facilities. A comprehensive report by Tata Trusts has estimated that India has only 1150 state run facilities with a capacity to house less than 100,000 people (Tata Trusts et al., 2011). Not only is this capacity inadequate but the challenges of variable standards, safety and quality of care are of far higher magnitude.



Source: Elderly population by state based on Census of India 2011 and UNFPA ageing profiles. Key economic indicators drawn from LASI Wave-1 (2017-18) and UNFPA. Senior care facility estimates (~1,150; =1 per 100,000 elderly) reported by UNFPA and the Samantha Trust.

The graph shows that several Indian states have large elderly populations, *while most elderly people lack insurance, pension coverage, and access to formal care*. This mismatch between population size and support systems highlights the need for stronger government action to expand social security and senior care infrastructure.

Further, beyond the basic needs of quality senior care, there is demand for palliative, rehabilitative, dementia care alongside emotional and social engagement. Start-ups have mushroomed like Seniorworld, Emoha, Epoch. For instance, the Max Group, under its subsidiaries Max Estates and Antara Senior Living, have used and leveraged an extensive healthcare background as means to create integrated senior living communities. More developers like DLF are now moving in and launching similar projects. Based on the evidence presented above, the addressable market for private senior care services in India is **limited and highly segmented**. Only a small share of the elderly population has the income security, insurance coverage, or pension support required to pay for private care on a sustained basis. Further, the private sector's effective market is largely confined to **urban, higher-income elderly**, mainly **formal sector retirees** and a subset of **informal non-agricultural elderly** with moderate incomes. This group represents a **minority of the total elderly population**. In contrast, the majority of elderly people—who are **rural, uninsured, without pensions**, and formerly employed in agriculture or informal work—fall **outside the viable private market**. For this group, private senior care services are largely unaffordable, making **public provision and state support essential**. Moreover, with 70 percent of India's elderly population estimated to be financially dependent (Press Trust of India, 2025), the *affordability and quality*

of senior living is often determined jointly with the children. That itself brings in complex dynamics of family norms and conventions. While India's societal model has traditionally proven the success of joint families, with increasing urbanization, migration and shrinking living spaces in expensive cities, families are turning nuclear. Therefore, demand for senior living spaces and senior care facilities is likely to increase exponentially and joint private and public partnerships may well be the newer norm for a sustainable solution.

Another opportune area for the private sector is *age tech products*. India's market is booming with tech innovations like wearables for fall detection and monitoring vitals, AI driven smart homes for safety, verified platforms for caregivers, helplines, telehealth and remote monitoring. The innovators are already launching prototypes of AI companion robots and AI chatbots. Start ups revisiting nutrition for elders is another upcoming space, as they acknowledge that as the body ages, it absorbs vitamins, minerals and bio actives at a much lower rate and changes nutrient absorption. Further, curated travel experiences and interest based communities are also actively coming up as part of the private sector offerings.

Conclusion: Adapting Approaches from Within and Around the World

Given the scale and inter regional variations in India, we would need integrated strategies involving public private partnerships, age friendly tech, higher quality infrastructure, skill development and affordable products focused on healthcare, financial security, digital inclusion and social engagement. India is not alone in facing this challenge and while solutions will always have to be tailored to our societal and economic realities, there are many examples to draw from.

A report from December 2024 on lessons for aging countries states that *healthier longevity and remarkable gains in life expectancy are to be celebrated*.

In Thailand, the World Bank explored opportunities to promote productive longevity, lifelong learning and labor force participation by the elderly (World Bank Group, 2021). Similar policies and projects were explored in Vietnam and Uruguay. Multi faceted approach is another way rather than it being isolated problem solving. For example, in Macedonia, home and community based care services are expanding the *opportunities for caregivers, especially women, to join the workforce* (World Bank Group, 2025). The policy intervention therefore at once addresses skill building, and caregiving.

As the World Economic Forums' 'Living longer, better: Understanding longevity literacy report states' (World Economic Forum, 2023): the world has entered "*a new demographic era in which the three stages of life of school, work and retirement is giving way to a multi stage life.*"

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