

# A Comparative Study of Operational Models and Economic Sustainability in The Elderly Care Market for Disabled and Dementia Patients in Urban China Under Population Aging

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**Abstract.** In the context of an aging population, China's elderly care market is experiencing a period of significant transformation. The demand for care for disabled and demented elderly people continues to grow, placing higher demands on the existing elderly care model. This study focuses on the home-based and institutional elderly care models, employing the PEST (political, economic, social, and technological) analysis framework to explore the operational characteristics, economic sustainability, and major challenges faced by the home-based and institutional elderly care models. The study found that in China, home-based elderly care occupies a mainstream position due to policy support and the influence of traditional concepts, but there are some changes such as a shortage of nursing resources, insufficient community support, and a low penetration rate of smart elderly care. Institutional elderly care offers distinct advantages in terms of professional nursing and the integration of medical care with elderly care. However, its affordability and market coverage are constrained by factors such as high costs, high consumption, mismatches between bed supply and demand, and disparities in regional development. Additionally, although the tax incentives in the elderly care market help reduce the cost of institutional elderly care, it is still difficult to alleviate the pressure on its operating costs. The affordability of some high-end elderly care institutions for ordinary families is still limited.

**Keywords:** China; elderly care market; disabled and dementia elderly; institutional care.

## 1. Introduction

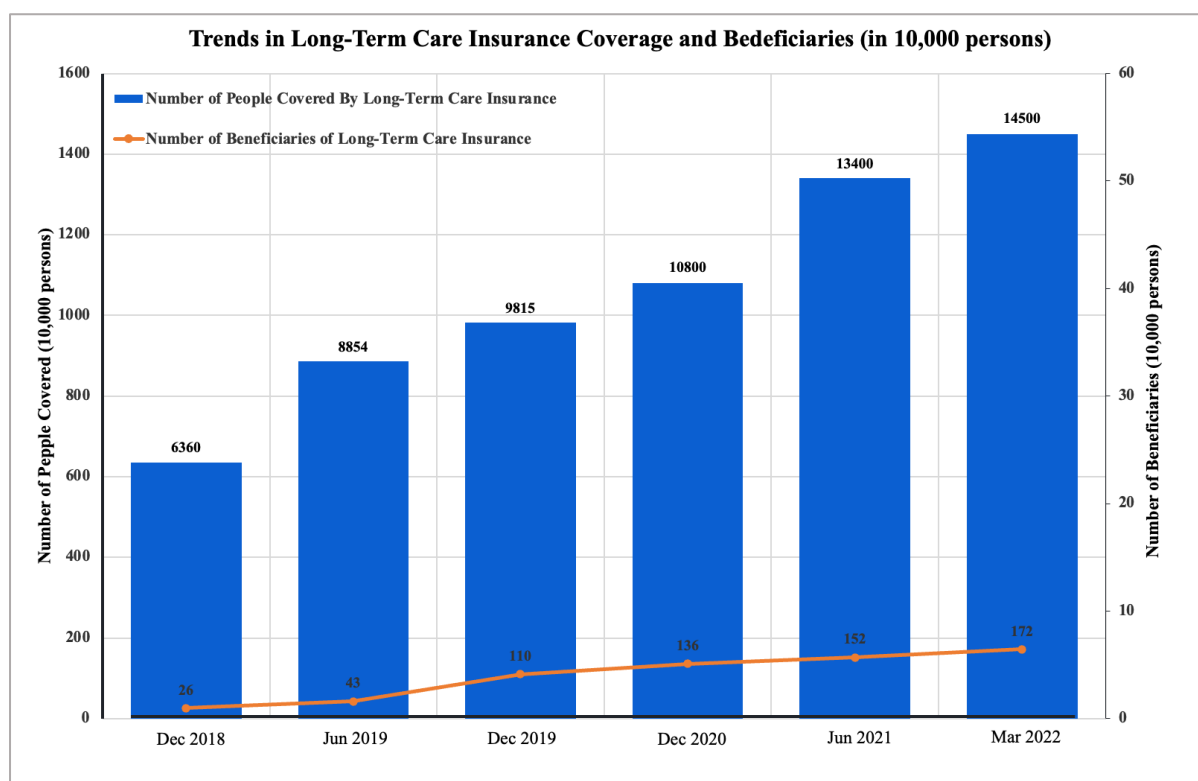
In the past decade, population aging has gradually become a global issue. As a populous country, China is also facing a severe problem of population aging [1]. According to data from the National Bureau of Statistics of China, in 2021, China will enter a deeply aging society, with the elderly population accounting for more than 14%. It is expected that around 2032, It is projected that by around 2032, China will transition into a super-aging society, with this demographic accounting for more than 20% of the population [1]. Concurrently, the proportion of elderly individuals living with disabilities and dementia is rising. The "China Aging Industry Development Report (2021-2022)" released by the China Center for Aging Research in 2023 highlighted that by the end of 2022, China's elderly population aged 60 and above is expected to reach 280 million, of which approximately 44 million (approximately 15.71%) are disabled or semi-disabled. Among the elderly population over 80 years old, about 40% are disabled or semi-disabled [2]. The increase in disabled and demented elderly people not only brings challenges and burdens to families and individuals but also puts higher demands on the social pension system. In this context, the development of the elderly care market is influenced by several factors, including the ageing of the population itself, as well as policy support, the economic environment, social demand, and scientific and technological progress. To comprehensively analyse the development of the elderly care market for disabled and demented elderly people, this paper employs the Political, Economic, Social, and Technological (PEST) analysis framework to explore different elderly care market models and their economic sustainability for disabled and demented elderly people in urban areas of China from the four dimensions of politics, economy, society, and technology.

## 2. Current Status and Challenges of the Home-based Elderly Care Model

### 2.1. Political

In recent years, the Chinese government has continued to make efforts to build a pension service system, launching the innovative “9073” pension model. This model has established a service framework of “90% home-based care, 7% community-based care, and 3% institutional care”, providing precise hierarchical care solutions for healthy elderly people, semi-disabled elderly people, and disabled and demented elderly people [3]. It is worth noting that from 2012 to 2021, the central government has invested a total of 35.9 billion yuan in special funds for the construction of pension service facilities [4]. These measures demonstrate the government’s strong commitment to home-based care, fostering not only innovation in service delivery models but also improvements in financial support—together forming a strong basis for enhancing the quality and efficiency of home-based care services.

Since as early as 2016, the government of the People’s Republic of China has been developing a pioneering Long-Term Care Insurance (LTCI) system to strengthen long-term care services for elderly individuals suffering from disabilities and dementia (Long-Term Care Insurance is a social insurance system that raises funds through social mutual assistance to provide basic living care and medical care security services for individuals in society when they lose their jobs or living ability due to old age, illness or disability) [5]. As of 2023, the pilot program has been expanded to 49 cities, with more than 145 million insured people and a total of 1.72 million beneficiaries. It is worth noting that certain pilot areas have increased the reimbursement rate for home care expenses to 60%, with a total of 1.72 million beneficiaries, as illustrated in Figure 1 [5]. For disabled and semi-disabled elderly individuals, the promotion of Long-Term Care Insurance (LTCI) can effectively help reduce the financial burden on their families and improve access to stable, long-term professional care for those with chronic degenerative conditions such as Alzheimer’s disease, Parkinson’s disease, and stroke-related complications.



**Fig. 1** The number of individuals covered by China’s long-term care insurance, as well as the number of those receiving benefits (10,000 people)

Date from: [http://www.sic.gov.cn/sic/81/455/0131/11794\\_pc.html](http://www.sic.gov.cn/sic/81/455/0131/11794_pc.html) (State Information Center (SIC), China)

## 2.2. Economic

An examination of market development trends indicates that China's home and community elderly care industry is undergoing a period of substantial growth. According to the "China Commercial Elderly Care Service Market Development Research Report" released by iResearch in 2022, the Compound Annual Growth Rate (CAGR) of this field is expected to reach 36.1% between 2019 and 2026, and this growth rate is projected to increase to 74.2% between 2022 and 2026 [6]. CAGR is an important indicator to measure the average growth rate of a market, industry, or investment over a certain period. It can reflect the long-term growth trend of the market rather than the fluctuations of a single year. In the elderly care industry, the high or low CAGR can intuitively reflect the changes in market demand and the potential for industry development [6]. The CAGR of the home and community elderly care market between 2019 and 2026 was 36.1%, and further increased to 74.2% between 2022 and 2026 [6]. This exponential growth trend is indicative of three significant trends. Firstly, there is a profound change in the concept of elderly care among residents, with the home-based elderly care model being widely recognised. Besides, the service supply system is continuously being optimised, with the level of specialisation and standardisation rapidly improving. Third, the industrial ecology is becoming increasingly mature, and a market pattern of healthy development is taking shape.

## 2.3. Social

In the development of China's elderly care service system, home-based elderly care has always occupied a significant position. This approach is not merely a reflection of the long-standing tradition of family-based care but also a rational response to the practical circumstances [7]. Meanwhile, the home-based elderly care model can also help the government to reduce the pressure on the construction and operation of public elderly care institutions to a certain extent and improve the efficiency of the use of elderly care resources. In light of the ongoing development of the economy, shifts in the population structure, and advancements in science and technology, China's current home-based elderly care model is undergoing continuous transformation. The traditional home-based care method based on family care is gradually evolving towards specialization, commoditization, intelligence and commercialization to better meet the growing long-term care needs of the elderly, especially the disabled, semi-disabled, and demented elderly [2].

## 2.4. Technology

Multiple factors are driving the transformation of China's elderly care system, with technological advancement playing a pivotal and indispensable role. With the rapid development of smart elderly care technologies such as artificial intelligence (AI), the Internet of Things (IoT), big data, and telemedicine, the service model of home-based elderly care is also changing. In recent years, the Chinese government has launched the concept of "Internet Plus home-based elderly care" as an innovative approach to elderly care service development [8].

For disabled and demented elderly people, due to their limited mobility, high demand for daily care, and difficulty in going out for medical treatment, the traditional home-based elderly care model is difficult to fully meet their long-term care needs. The development of science and technology has effectively provided a new type of care solution that is safer, more convenient, and more efficient [8]. Concurrently, the widespread adoption of smart monitoring devices has resulted in a significant improvement in the quality and safety of daily care for disabled and demented elderly individuals. For example, smart bracelets, blood pressure monitors, and blood glucose monitors can record the physiological indicators of the elderly around the clock. Smart mattresses and fall alarm systems can detect the sleep quality and activity of the elderly. Once an abnormal situation occurs, such as a fall

or long-term inactivity, the system will automatically issue an alarm, thereby reducing sudden health risks and improving the safety of the elderly at home.

### **3. Current Status and Challenges of the Institutional Elderly Care Model**

#### **3.1. Political**

At present, institutional care constitutes a significant component of the “9073” pension model, representing a pivotal option for the long-term care of elderly individuals with disabilities and dementia [3]. The “Opinions on Deepening the Reform and Development of Elderly Care Services” (2025), issued by the Chinese government, explicitly emphasised the necessity of optimising the construction of institutional elderly care service systems. The government has indicated its intention to implement classified reforms of institutional elderly care by local conditions in future development [9]. The document called for local governments to formulate supporting policies based on actual conditions, focusing on three key aspects: first, establishing a regional differentiated policy support system; second, promoting the scale and professional development of the nursing service market; third, especially for the disabled and demented elderly group, through policy guidance and financial subsidies, encourage social forces to establish professional care institutions [9]. At the same time, the government is instrumental in the promotion of the expansion and professional development of the elderly care market. In addition, the Chinese government also especially emphasized in the report that for disabled and demented elderly people, the government will take guiding measures to encourage private and private elderly care institutions to accept disabled and demented elderly people and provide corresponding subsidies and support for these institutions [9].

#### **3.2. Economic**

Regarding the overall institutional elderly care system, the Chinese government issued the “Announcement on Preferential Tax and Fee Policies for Community Family Services such as Elderly Care, Childcare, and Housekeeping” (Ministry of Finance Announcement No. 76, 2019) on June 28, 2019, stating that it would provide comprehensive tax and fee preferential policies for various types of elderly care institutions [10]. The announcement indicates that the revenue earned by elderly care institutions from providing community elderly care services is not subject to value-added tax. When calculating taxable income, elderly care institutions only need to pay taxes based on 90% of the total income of the institution [10]. Moreover, when elderly care institutions purchase or lease real estate or land for elderly care services, they do not need to pay a deed tax. Real estate and land owned or leased by elderly care institutions are exempt from real estate tax and urban land use tax. When elderly care institutions apply for land use or carry out infrastructure construction, they are exempt from real estate registration fees, farmland reclamation fees, land reclamation fees, land idle fees, etc [10]. Tax and fee reductions have effectively reduced the initial investment costs for institutional care while also reducing its long-term operating costs and tax burden and improving the return on investment (ROI) of nursing homes. This has the potential to attract significant capital, promote the market-oriented development of institutional care, and optimise the operating environment of such institutions. Consequently, it enables them to provide high-quality long-term care services at a more affordable price, thereby further promoting the development of the elderly care industry.

#### **3.3. Social**

For the elderly with severe disability and severe cognitive impairment, the home-based elderly care model has certain limitations. Although the integration of smart monitoring equipment and door-to-door nursing services has enhanced the convenience and safety of home care to a certain extent, the limited family care capacity, insufficient professional nursing resources, high difficulty and intensity of nursing make it difficult for many disabled and demented elderly people to obtain long-term, stable and professional care at home [11]. Especially for the elderly who are bedridden for a long time and require round-the-clock care, it is difficult to meet their complex care needs by relying

solely on family and community resources. In such cases, institutional care has become an important choice for long-term care for disabled and demented elderly people [3]. Compared to home-based care, institutional care delivers a broader range of professional services, such as 24-hour support, structured rehabilitation programs, assistance with daily living, and standardized nursing management. These services collectively ease the burden on families and enhance the overall well-being of the elderly [6]. Therefore, institutional care plays an irreplaceable supporting role for severely disabled and cognitively impaired elderly individuals.

The institutional elderly care service system in China is comprised of two main types of care facility: public and private nursing homes. Each of these has distinct service characteristics and positioning. As an important part of the social security system, public elderly care institutions are usually operated by the government or public institutions, mainly including nursing homes, social welfare institutions, and some medical and nursing care institutions. Public elderly care institutions provide basic elderly care security for the elderly who are in financial difficulties, disabled or have no children to support them [9]. Public elderly care institutions generally impose low fees, with most of these costs being subsidised by the government. However, resources are limited, beds are often in short supply, and the admission threshold is also high. In contrast, private elderly care institutions that are invested in and operated by social capital, such as medical and nursing care institutions, community elderly care institutions, elderly care real estate models, and high-end elderly care homes, can provide more diversified service models to meet the elderly care needs of different levels of elderly people. Private elderly care institutions usually have a better environment, more modern facilities, and more professional nursing levels and can provide more personalized services, but the fees are relatively high.

### 3.4. Technology

In terms of technology, the Chinese government is currently vigorously promoting smart elderly care and encouraging the elderly care industry to introduce intelligent equipment and technologies [12]. According to existing questionnaire statistics, about 83% of the elderly in China would prefer smart elderly care devices when faced with smart products [13]. This provides certain support for the promotion of artificial intelligence in the elderly care industry. At present, China's AI technology is developing rapidly. For instance, the development of greyscale models has the capacity to accurately predict the demand for elderly care services in Chinese society [13]. This prediction is based on the current actual situation, combined with the population structure, regional economic development, and the proportion of the elderly population in the region. The utilisation of these models in this manner has the potential to provide the Chinese government with assistance in the formulation of policy [13]. At the same time, the establishment of a medical information intelligent platform can help elderly care institutions obtain relevant information about the elderly in a timely and accurate manner and provide targeted elderly care services [13]. The popularization of smart devices has also helped elderly care institutions to reduce the pressure on human resource costs and work intensity to a certain extent [12]. Nevertheless, a number of issues persist in the development of smart elderly care products in China, including product homogeneity, limited functionality, and poor adaptability to the demands of the elderly care market [12]. The complexity of certain products' functions and usage can be a significant barrier for elderly individuals, leading to a sense of alienation from these products. At the same time, due to the existence of the digital divide and the technological divide, there are many difficulties in promoting and popularizing smart elderly care [12].

## 4. The main challenges confronting the two pension models

China's comprehensive elderly care system is not without its shortcomings. Both the home-based and institutional models present certain problems. Although the home-based elderly care model aligns with China's traditional concept of eldercare and receives government support, its practical implementation has revealed several challenges, including a mismatch between supply and demand,

a shortage of professional nursing staff, uneven service quality, and disparities in economic affordability [14]. There are also many difficulties in the popularization and promotion of smart elderly care. Some people have doubts about the privacy, accessibility, and data protection of smart monitoring devices [15]. Meanwhile, although smart devices and remote care systems have gradually entered the field of elderly care, many older adults lack the necessary digital literacy or have difficulty adapting to new technologies, leading some to reject the use of smart devices altogether. This means that the development of smart elderly care still faces certain challenges of aging adaptation and low penetration. In addition, the institutional elderly care model also faces numerous difficulties. According to a report by iResearch, China's current institutional elderly care model is facing heavy operating costs and long-term operating difficulties [6]. In terms of the current average consumption level in China, private elderly care institution remains a relatively high-end option. Due to the limited affordability for ordinary Chinese residents, the high vacancy rate in elderly care institutions has resulted in increased operating costs for private facilities [6]. Taking Taikang Home, China's current leading private elderly care institution, as an example, the price of its professional nursing rooms for disabled and demented elderly people is as low as RMB 7,000 per month and as high as RMB 14,000 per month. Such prices are significantly higher than the average annual disposable income of urban residents in China, which is RMB 43,834, and the average monthly level is about RMB 3,653 [6], far beyond the economic affordability of most families. Moreover, there is also the problem of uneven regional distribution of private elderly care institutions. When consider Taikang Home as an example, there is a significant imbalance in the urban distribution of Taikang Home institutions. The layout is mainly concentrated in the eastern coastal and central economically developed provincial capitals, such as Beijing, Shanghai, Guangzhou, Shenzhen, Hangzhou, Nanjing, Wuhan, Changsha, and other first- and second-tier cities, while its coverage in the western and northeastern regions is relatively limited. This reflects that the market positioning of most private nursing homes tends to be high-income people, and the private nursing market still has strong regional development characteristics.

## 5. Conclusion

In summary, the Chinese elderly care system is undergoing rapid development. The two predominant models of elderly care in China are home-based and institutional. Each model has its own advantages, yet each also faces distinct challenges. However, it still faces limitations such as a shortage of nursing resources, underdeveloped community-based support facilities, inadequate age-friendly smart care services, and low technology penetration, making it difficult to meet the diverse needs of elderly individuals with disabilities or dementia. Institutional elderly care offers advantages in professional nursing and integrated medical services, providing more specialized and diversified long-term care for elderly individuals with disabilities or dementia. However, due to high operating costs, an imbalance between bed supply and demand, and uneven regional distribution, vacancy rates remain relatively high, and institutional coverage is limited.

In the future, further optimization of China's elderly care system will require coordinated efforts across the political, economic, and social spheres. In terms of policy, it is necessary to further improve welfare measures for the elderly care industry and to enhance the guidance and supervision of social elderly care services. Meanwhile, the coverage of long-term care insurance should be further expanded to alleviate the burden on families caring for the elderly with disabilities or dementia. Economically, preferential tax and fee policies should be maintained. Besides, investment in the training and welfare of professional caregivers should be increased to attract and retain more professionals in the elderly care industry. At the societal level, greater attention should be paid to mobilizing social and community resources, and social organizations should be encouraged to participate in the development of the elderly care sector. As for technology, smart elderly care enterprises are advised to enhance their comprehension of the requirements of the elderly, augment investment in product research and development, and refine the adaptability of smart devices for

elderly users. These measures are expected to broaden the scope of applications and accelerate the adoption of smart devices in the elderly care market.

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