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Social Governance and the Challenges of Population Aging in Central Asia:

Problems and Prospects

Abstract: This article is a comprehensive study of various aspects of demographic change in the countries of Central Asia. It considers population aging and its impact on health care, the economy, and social policy. The writers use a systems approach, along with analysis, comparison, synthesis, deduction, and classification. In the field of health care, there is an increasing need for geriatrics and long-term care for elderly citizens. In the economic sphere, population aging leads to demographic imbalances and challenges in pension systems, which require revision of social programs and policies. In the area of social policy, the problems for older people include social exclusion and limited access to the labor market. The writers analyze demographic indicators in Central Asia and China and provide recommendations for improving access to health and social support for older people. These research findings could be used in the development and implementation of strategies for effective social governance in response to aging populations: adaptive approaches to health care, labor management, and social security, and sustainable and inclusive social systems.

Keywords: demographic change, health care, economic sustainability, labor activity, pension system

Introduction

Population aging is a global social trend (Moody and Sasser 2020). The challenges faced by Central Asian countries in the context of aging populations include demographic change, imbalances between the number of able-bodied and older citizens, and the need for innovative approaches in adapting social institutions, health care, and the labor market to the new conditions.

These challenges have become topical in Kyrgyzstan in recent decades in connection with such factors as increasing life expectancy and declining fertility. Currently, Kyrgyzstan is experiencing an increase in the proportion of the elderly population, which creates difficulties for social management and the health-care system (Mamatov et al. 2020). The rise in the number of older people means a greater need for health care, social services, and pension provision, and thus there is a need to adapt government policies and programs in order to address the new socio-economic conditions effectively (Yuliia et al. 2025).

Mamatov et al. (2020) analyze fields of knowledge related to research on aging and care of the elderly population in Kyrgyzstan. Their paper highlights such key aspects as the level of development of gerontological and geriatric services, the adaptation of medical systems to the needs of the aging population, and the availability of professional staff in the field. As a result, for the further development of gerontology and geriatrics in Kyrgyzstan, Mamatov et al. recommend updating educational programs and medical infrastructure, and the formation of integrated approaches to managing the health and quality of life of the elderly population. Avdeev (2021) analyzes the demographic challenges facing Kyrgyzstan, with particular attention to identifying trends and factors affecting demographic dynamics. According to this writer, the elderly population plays a key role in the socio-economic development of the country, and therefore the development of an effective policy in this area is of particular importance.

Inakov et al. (2020) examine the characteristics of the aging population in the context of developing countries, using Uzbekistan as an example. Their paper identifies such challenges as limited access to health care and social support and makes recommendations for improving the quality of life of the elderly through adaptive social programs.

Yusupov (2021) examines current issues related to social support for older men in the context of demographic changes taking place in Uzbekistan. He describes the most acute problems of the older male population, including difficulties in gaining access to high-quality health care, social services, and effective pension systems.

Berde and Kurbanova (2023) analyze the impact of demographic processes combined with human capital development on economic dividends in Central Asian countries. Their paper considers social policy aimed at optimizing the use of demographic decline and proposes promising approaches for sustainable socio-economic development in the context of population aging in Central Asia.

Boymurodov (2022) examines key aspects of population dynamics, including fertility, mortality, and migration, and analyzes their impact on the overall demographic picture. He notes that demographic changes have had a significant impact on the socio-economic development of Uzbekistan, which requires the development of sustainable strategies for managing demographic processes that can effectively respond to the challenges and needs of modern society.

Based on the fact that to date there are no studies on the role of social governance in the process of population aging, the present study aims to find effective social governance strategies to ensure sustainable and prosperous development of the aging population in Central Asia.

Materials and Methods

For a comprehensive and in-depth study of the topic of demographic change and population aging, the following scientific methods were used: a systems approach, analysis, comparison, synthesis, deduction, and classification.

Using a systems approach, our study explored in detail how demographic change (such as population aging) affects various aspects of society, including the interrelationships

between demographic trends, health, economic sustainability, and social policy. The systems approach revealed that population aging has a significant impact on the structure and functioning of society; in Central Asian countries, health-care systems need to be strengthened, approaches to care for older people need to be adapted, and access to health services should be improved. The systems approach allowed us to assess the high importance of reforms in pension systems to ensure economic sustainability and social support for the elderly population.

We identified the main causes and consequences of demographic changes associated with population aging and analyzed a set of interrelated factors, such as long-term changes in the structure of the population, and challenges to the health system, pension provision, and the economy as a whole. We determined priority areas for intervention in the context of the challenges associated with population aging.

We used the comparison method for demographic data from 2012 and 2021 in the countries of Central Asia and thus identified general trends and differences in the process of population aging in the region. We also assessed the dynamics of demographic change over the past decade. We used this method to provide a deeper understanding of the specificities of demographic processes in Central Asia and their impact on society, the economy, and health.

We used the synthesis method as a support in identifying common patterns, areas of influence, and trends that unite different aspects of demographic change, and to integrate data on the impact of population aging on health, the economy, and social policy into a coherent picture.

We used the deduction method to identify patterns in the data; we relied on generalized conclusions and principles derived from the aspects of population aging under consideration. We used this method to clarify interrelationships and cause-and-effect relationships identified through the systems approach, and thus deepened our understanding of the impact of aging on different areas of social life.

We used the classification method to systematize demographic data within the study. We used the results to identify key trends in demographic change in Central Asian countries. In addition, the classification method helped us to identify eight key measures to improve access to health and social support for older people.

Results

Consideration of the Pension System, the Labor Activity of the Elderly, and their Contribution to the Economy

Demographic imbalance, caused by increasing life expectancy and decreasing birth rates, leads to disequilibrium between pensioners and the working-age population and is the main weak point of many pension systems. Stereotypes and age discrimination limit the access of the elderly to the labor market, making it more difficult for their experience to be utilized. The underfunding of pension systems is another weakness producing instability and inadequate pension payments, and potentially leading to social and political

tensions. Due to financial illiteracy and difficulty in accessing financial services, the ability of the elderly to contribute to the economy may be limited. Problems in health and social support create additional challenges, as older people may require care and medical assistance, which can be a burden on families and the state. Overcoming these weaknesses requires a comprehensive approach, including reforms to pension systems, support for the participation of older people in the labor force, increased financial literacy, and improved access to health and social support.

Population aging has a significant impact on the economic structures of society. One of the main economic consequences is a change in labor market dynamics. An increase in the share of the elderly population is accompanied by a decrease in the share of the working-age population (Han and Lee 2020), which may affect the overall level of labor productivity. Pension systems are subject to serious economic challenges, as the increasing number of pensioners requires additional financial resources for pension benefits and consequently more pressure is placed on government budgets (Buribayev et al. 2016). Pension systems thus need to be reviewed and reformed to make them sustainable for an aging population. The provision of health care also presents economic challenges. The increasing number of older people is usually accompanied by rising health care and long-term care costs (Lubomski et al. 2024). The health-care system must thus be adapted and expanded, and resources must be used more efficiently to ensure quality health care for the older generation.

An older population is associated with changes in consumer behavior and market structure. Older people tend to change their consumption preferences, favoring goods and services related to health care, long-term care, and other aspects related to old age. This, in turn, affects the demand for certain goods and services, stimulating the development of relevant sectors of the economy. Population aging is a complex economic phenomenon affecting various sectors of society. Effective management of these challenges requires not only the adaptation of economic institutions but also the development of innovative strategies in the areas of labor, pensions, and health care to ensure sustainable economic development. From a social perspective, the increasing proportion of the elderly population leads to changes in the dynamics of intergenerational relationships and sociocultural standards (Walker et al. 2021). As the number of older people increases, age groups become more diverse, requiring a rethinking of concepts of family, labor relations, and education.

Economic structures are also undergoing significant changes. A greater number of older people increases the state's financial expenditures on health care and social protection systems (Abraham and Kearney 2020). At the same time, population aging affects the labor market as the share of working-age population decreases, which in turn can affect economic growth and competitiveness. Social and economic structures, under pressure from the increasing proportion of the elderly population, face challenges in regard to pensions and health care (Ebbinghaus 2021). The need to ensure the sustainability of these systems and their adaptation to changing demographic conditions is becoming an urgent task for public and private enterprises. Prudent planning and careful management of resources are an integral part of social and economic policy in such an environment.

Social institutions play a key role in building structures to ensure quality of life for older people (McMaughan et al. 2020). State and non-state organizations should collaborate to create environments that promote social inclusion and meet the needs of

older people (Teymurova et al. 2024). Social institutions in the sphere of health care should aim at ensuring the accessibility of quality health-care services for older people, including prevention programs, treatment of chronic diseases, and rehabilitation. The social protection system, represented by state institutions, should play a key role in ensuring the financial stability of older persons through pension programs, social benefits, and other forms of support (Buribayev et al. 2015). Educational institutions should contribute to the preservation of cognitive functions and the active participation of older persons in social life. Cultural and social organizations should create positive public perceptions of the aging population, promoting inclusive environments and improving psychosocial well-being (Miethlich and Slahor 2018). In this way, social institutions can have a comprehensive impact on the management of aging populations, combining efforts to ensure the health, social support, economic stability, and cultural integration of older persons into society.

The state, non-state organizations, and the private sector also play key roles in social governance, forming a coherent system to address social problems and ensure the well-being of citizens (Hughes and Wearing 2022). The role of the state in this context is extremely important as it is the primary regulator, provides basic social structures and services (Botos and Botos 2020), and is responsible for developing and implementing policies for the social protection of citizens, including health care, social benefits, and pension programs. Non-state organizations usually perform other important functions, providing additional social services and acting as intermediaries between the state and society, with a focus on specific problems and population groups. The role of the private sector is to provide jobs and social benefits, and to support charitable projects. Cooperation between the state, non-governmental organizations, and the private sector is a key element of effective social governance, enabling the development of integrated strategies and ensuring a balanced approach to the social needs of society.

Analysis of Demographic Indicators of the Countries of the Central Asian Region and China

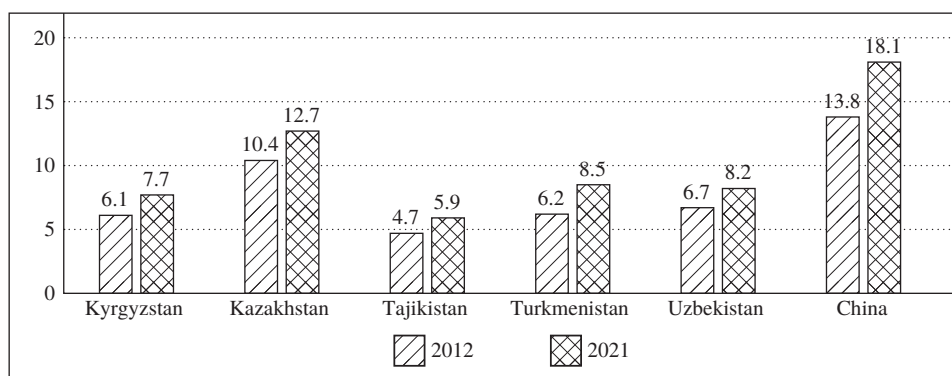
In 2012, the share of the population over 60 years old was 6.1% in Kyrgyzstan, 10.4% in Kazakhstan, 4.7% in Tajikistan, 6.2% in Turkmenistan and 6.7% in Uzbekistan. In China in 2012, the share of the elderly population was 13.8%, which is significantly higher than in the Central Asian states. Data for 2021 showed an increase in the proportion of the older population in Kyrgyzstan to 7.7%, in Kazakhstan to 12.7%, in Tajikistan to 5.9%, in Turkmenistan to 8.5%, and in Uzbekistan to 8.2%. In China, the proportion of the older population increased to 18.1% in 2021 (ESCAP 2023) (Figure 1).

Analyses of statistics for 2012–2021 on the share of the elderly population in Central Asian countries and China have highlighted several important trends (Population Division. World... 2022; ESCAP 2023):

1. Overall trend in the proportion of the older population: most countries in the region experienced an increase in the proportion of the older population between 2012 and 2021, which may reflect increased longevity and other demographic changes.
2. Differences in the rate of increase in the proportion of the elderly population: Kazakhstan and Uzbekistan have shown greater growth in the proportion of the elderly population than other states in the region, indicating different rates of demographic change,

Figure 1

**Representation of demographic changes (share of the elderly population)
in Central Asian countries and China**



Source: compiled by the authors.

and social and economic factors. At the same time, Kazakhstan's and Uzbekistan's figures lag significantly behind China's, which may be reflected in differences in the performance of health-care systems, provision for the elderly population, and attitudes toward older people.

3. Tajikistan showed the smallest increase in the share of the elderly population. This could be indicative of specificities in the demographic situation, the influence of migration, or other factors.
4. Global context: it is important to note that although the percentage of this group in Kyrgyzstan remains low compared to China, it is increasing, and thus there is a need to develop and implement effective strategies for managing an aging population.

The development of a preliminary health-care system to serve an aging population requires a comprehensive and long-term approach. Establishing specialized programs and services for the older generation is an important step in adapting the health-care system and should include the development of programs for the prevention, diagnosis, and treatment of characteristic diseases, as well as the organization of rehabilitation and long-term care. These measures will help to ensure a more personalized and integrated approach to the health of older people.

An integral part of training workers for the health-care system should involve providing them with the skills necessary for serving an aging population. This requires training medical staff in geriatrics and gerontology, as well as the development of measures to attract specialists in working with older patients. The introduction of technological solutions into the health-care system to improve the accessibility of health services and enable remote health monitoring (e.g., telemedicine, electronic medical records, and other tools that improve the efficiency of care for elderly patients) is also important. Ways to improve access to health and social support for older people are summarized in [Table 1](#). The combination of these measures will help to create a more accessible and adapted system of health care and social support, responding to the diverse needs of an aging population.

Table 1

Key steps to improve the accessibility of health and social support for older people

Steps	Description
Development of geriatric medicine	Expanding specialized care for the elderly, including through geriatric units in hospitals, and educating doctors about aging, can improve the efficiency of health care.
Mobile health services	The organization of mobile health teams that provide services directly in the homes of older people can significantly improve access to health care, especially for those with limited mobility.
Telemedicine development	The introduction of telemedicine for remote counselling and health monitoring of elderly patients can provide access to health services, even in remote or sparsely populated areas.
Establishment of long-term care centers	The development of long-term care centers that provide health care and social support can ensure harmonious and complete services for older people, especially for those in need of specialized care.
Training of health-care workers	Educating health-care providers and social workers on aspects related to aging will enable them to better understand and respond to the unique needs of older patients.
Financial support measures	Developing financial support programs for older people (e.g., benefits for health services or medicines) can significantly reduce the financial barrier to accessing health care.
Creation of public spaces for social activity	The development of community spaces and centers for social activity for older people contributes to their social support and encourages their maintenance of an active lifestyle.
Active involvement of family and community	Creating programs to involve family and community in the care of older people can improve public perception and create a more supportive environment.

Source: compiled by the authors.

Social capital is a concept that describes the set of social relationships, interactions, and networks that exist in society. The term includes trust, mutual aid, social ties, social participation, and other elements of the social structure that contribute to the formation of a community and to interaction among its members. Social capital plays an important role in the context of determining the quality of life of older people. Social support and interactions with a wide range of people influence the psychosocial well-being of older adults. Stable social ties and supportive relationships help prevent the social isolation common among older adults (Chetty et al. 2022).

Trust and mutual assistance, which are key elements of social capital, create a supportive environment for the aging population. Older people with a sense of belonging to a community participate more actively in social life, including volunteering and cultural activities. Social capital also improves access to resources, making it easier to get help in difficult situations (Mukhtar and Nawang 2025). Sharing information and experiences within the community improves the quality of care for older people by supporting them in different areas of their lives (Spankulova et al. 2024). Thus, social capital plays an important role in enriching the lives of older people and strengthening their social ties.

Social networks significantly support the aging population by providing social interaction and creating a supportive environment. They strengthen older adults' ties with family and friends, reducing feelings of isolation and bolstering emotional well-being (Oyinlola 2022). Virtual communities play an important role in disseminating information about resources and services for older people, as well as facilitating their participation in the digital society; such communities give access to education and medicine, enrich the lives of older people, and foster a more supportive and inclusive environment.

Future Projections and Policy Implications

The demographic shift in Central Asia poses distinct challenges necessitating thorough analysis and proactive policy formulation. Current trends suggest that the region will undergo substantial demographic changes in the forthcoming decades, albeit at rates that may vary among countries. According to current demographic indicators and growth trends, Kazakhstan is expected to attain a critical mass of elderly individuals first, with projections indicating that by 2040, around 15% of its population will be over 65 years of age. Kyrgyzstan and Uzbekistan are anticipated to exhibit analogous trajectories, though with a delay of roughly 5–7 years.

The forthcoming demographic transition requires urgent structural reforms in multiple critical areas. Central Asian nations must reform their tax systems to secure sustainable financing for elder care and pension schemes. This may entail a phased escalation of social security contributions over the forthcoming decade, alongside initiatives to expand the tax base via enhanced collection methods and diminished informal employment.

Pension systems throughout the region need focused scrutiny. Current defined-benefit schemes in the majority of Central Asian nations are poised to become unsustainable due to rising dependency ratios. A shift to mixed pension systems, integrating both contributory and non-contributory components, may enhance fiscal sustainability while safeguarding at-risk elderly demographics. Kyrgyzstan could gain from implementing a multi-pillar system that integrates a fundamental social pension with compulsory contributions and optional savings plans.

Health-care infrastructure requires substantial modernization to support the increasing elderly demographic (Kerimkhulle et al. 2023). The existing health-care systems in Central Asia, which are predominantly structured for younger demographics, require significant reorganization, encompassing the creation of specialized geriatric care units, the training of health-care professionals in elder care, and the establishment of long-term care facilities. Investing in preventive health-care initiatives may alleviate future strain on health-care systems by fostering healthy aging in the current middle-aged demographic (Komilova et al. 2024).

Labor market policies require significant modification to address an aging workforce. This involves the formulation of adaptable retirement plans facilitating gradual shifts from full-time employment to retirement, the enforcement of age-discrimination safeguards, and the establishment of incentives for enterprises to retain and employ older individuals. Targeted professional development programs for older workers could enhance their productivity and relevance in a changing job market.

The social infrastructure for elderly populations necessitates substantial improvement, including the creation of community-based support systems, the enhancement of urban planning to foster age-friendly environments, and the establishment of social programs that encourage active aging and community involvement. The integration of technology, especially in health care and social services, may facilitate the closure of service gaps while enhancing efficiency in the provision of elder care.

The financial ramifications of these reforms are significant and necessitate meticulous planning. Initial estimates indicate that Central Asian nations must allocate 3–5% of their annual GDP over the next twenty years to address the challenges posed by their aging populations effectively. This investment, though substantial, is crucial to avert more expensive crisis management strategies in the future.

These demographic shifts also offer prospects for economic diversification and innovation. The increasing elderly demographic may catalyze the emergence of new sectors dedicated to elder care, health-care technology, and age-suitable products and services. The “silver economy” has the potential to be a substantial catalyst for economic growth if adequately bolstered by policy frameworks and investment incentives.

The efficacy of these reforms will predominantly rely on regional collaboration and the exchange of knowledge among Central Asian nations. Due to their common cultural contexts and analogous demographic challenges, collaborative strategies for aging-related policies could enhance resource efficiency and expedite the formulation of effective solutions. International collaboration, especially with nations that have successfully undergone analogous demographic transitions, could offer significant insights and assistance with strategies.

Discussion

To identify key aspects related to population aging, highlight the main challenges in the field of social, economic, and health support for older citizens, and familiarize ourselves with the experience of other countries in the context of the aging population, we conducted a review of the research.

Rudnicka et al. (2020) highlight the World Health Organization (WHO) approach to healthy aging, drawing attention to WHO strategies and recommendations aimed at maintaining health in old age and emphasizing the importance of a proactive approach to health care, with a focus on preventive measures and early detection of risks throughout life. The authors analyze the main principles proposed by WHO and stress key aspects supporting the physical and mental well-being of older people. Their study also covers the role of the medical system in implementing these principles and introducing innovative approaches to health care for older citizens. In the context of evolving approaches to aging in different countries and regions, Rudnicka et al. review the changes made by WHO in understanding and supporting the health of aging populations. The authors list the practical recommendations and programs that have resulted from these efforts and describe their implementation at the national level. The authors also describe the challenges and barriers faced by healthy-aging programs and suggest methods to improve their effectiveness. Along with modernization of the health-care system and social institutions, this approach involves

a stress on preventive interventions and early risk identification in ensuring the health of the aging population.

Fang et al. (2020) provide an overview of key research areas related to population aging in China. Their paper showcases various studies aimed at better understanding aging processes and possible outcomes in practical medical applications. Fang et al. pay particular attention to long-term care for elderly citizens, including the development of effective models of care adapted to Chinese culture and the social context. They consider demographic changes and social challenges and explore aspects of policymaking to support an aging population. They emphasize the importance of social networks for China's aging population and their role in social support and in the participation of older people in community life. The authors also reflect on the impact of social interactions on the health and well-being of the elderly population and call for the implementation of coordinated actions and strategies to address the challenges of aging in China; they argue that such actions are key to building effective and personalized approaches to providing support for the aging population. Their findings highlight the need to develop effective models of long-term care adapted to a country's culture and social context.

Gu et al. (2021) review the key demographic trends shaping changes in the scale and dynamics of population growth at the global level. They analyze in depth the factors affecting population growth, including fertility, mortality, and migration. They also highlight the main reasons for changes in population growth rates, such as medical and technological advances, socio-economic factors, and changes in cultural preferences. Gu et al. pay special attention to global differences in population growth rates and their impact on the demographic picture of the world. They consider problems associated with rapid population growth in some regions and the reverse trend in others, emphasizing the importance of such relationships for the social and economic sustainability of states. They raise issues related to the age structure of the population and describe the trends of population aging in different regions of the world. Their study presents the implications of these demographic changes for social policy, the economy, and health. Furthermore, the authors point to the importance of considering long-term trends in population growth when designing social and economic development strategies in different parts of the world. Their research confirms the impact of medical and technological advances, socio-economic factors, and changes in cultural preferences on population growth dynamics.

Wijaya et al. (2020) analyze how demographic factors can affect the labor force and overall economic progress. They study various aspects of the interaction between population structure and the labor market and how these factors affect the dynamics of economic growth. They argue that changes in the age structure of the population can create both challenges and opportunities for development and that it is important to understand these interactions in order to form sustainable economic strategies. Wijaya et al. also analyze factors in life satisfaction and their impact on the labor productivity of the population. They examine the impact of the level of happiness in a society on human development and hence economic growth. They state that there is a need to include psychosocial aspects in the analysis of economic and demographic processes in order to form a more harmonious interaction between demographic trends, happiness levels, and economic growth through appropriate policy and social measures. Wijaya et al. suggest

practical actions to manage demographic pressure, considering its impact on human well-being and social development. Thus, Gu et al.'s and Wijaya et al.'s papers propose ways of managing an aging population that could complement each other and offer a more comprehensive approach to the formation of new social and economic strategies.

Agarwal et al. (2020) focus on the public-health and social-protection challenges posed by the aging population in India. The authors highlight specific challenges related to pension provision and the economic sustainability of older people, namely, the imbalance between the number of pensioners and the working-age population (which can put pressure on pension systems), the reduced access of older people to the labor market (which affects the prolongation of their working life and the use of their experience and skills), the financial vulnerability of older people due to the underfunding of pension funds, and the inaccessibility of public health care for older people and the high cost of private health care. The authors focus on problems with the labor activity of the elderly population and propose possible solutions, including the revision of social programs and pension systems. The authors also provide information on the facts and challenges facing India in the context of population aging and suggest methods for developing sustainable public and social policy strategies, especially recommendations for improving the health-care system and creating more effective social programs for elderly citizens. India's experience in combating the problems of an aging population correlates in many respects with the experience of Central Asian countries. Agarwal et al.'s article also confirms the need to revise social programs and pension systems, improve the health-care system, and develop effective social programs for elderly citizens.

The studies reviewed highlight key aspects of population aging that are relevant to different countries. Issues such as demographic disparities, health challenges, limitations in access to employment, and financial vulnerability pose significant challenges to the economic and social sustainability of older citizens. However, the above studies stress the importance of an integrated approach at the level of society and the state to address these issues effectively and create an enabling environment for an aging population.

Conclusions

Our study on population aging in Central Asia has revealed that demographic changes such as increasing life expectancy and declining fertility are leading to significant challenges for pension systems in the region, creating imbalances between the number of pensioners and the working-age population and putting pressure on the social, economic, and health systems of states. Our analysis showed that, due to the increasing proportion of the elderly population in the region, attention must be paid to the sustainability of pension systems, financial support, and the involvement of the elderly in economic activity. We have also emphasized the importance of a comprehensive approach to managing the aging population, including the development of geriatric medicine, support for social activity, reform of pension systems, and ensuring access to health care.

As our study was aimed at formulating effective social management strategies, we discussed various social institutions, their role in sustaining the elderly population, and

ways to improve the quality of services and functions. Our study demonstrates that though the growing proportion of older people poses new challenges for society in health care, social management, and the economy, demographic change also motivates innovation. We found that as the number of older people increases, there will be a growing need for innovative medical care, with advanced technologies for long-term care and the prevention of chronic diseases. There will also be a need to prolong work activity, which will create an opportunity to develop flexible and inclusive employment models, as well as training programs to help older workers retain relevant skills. It could also be possible to develop the economic potential of older people through various forms of activity, including entrepreneurship, volunteering, and educational and creative projects.

It should be noted that effective management of the aging population requires concerted effort on the part of governmental, public, and private entities, as well as a thorough understanding of the unique needs and capacities of this age group. Thus, further research should focus on exploring and debunking stereotypes and cultural perceptions of aging that may negatively affect the social perception of older people. The solution to this problem in the future will facilitate the integration of older people into the working and social life of society, and thus stimulate their economic activity.

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