



Opportunities and Challenges of Smart Pension in the Digital Perspective of Aging—Based on Citespace Visual Analysis

Yating Sun¹(✉) and Wenjing Zhang²

¹ School of Political Science and Law, University of Jinan, Jinan, Shandong, China
2432314305@qq.com

² Shandong Women Entrepreneurship Development Service Center, Jinan, Shandong, China

Abstract. At present, China has entered an aging period. Facing the increasingly serious pressure of population aging, the supply and demand of pension is uneven. The problem of Heng is becoming more and more obvious. As a reform of the traditional pension model, digital intelligent pension is born in response to the situation and is raised for China.

Keywords: Smart pension · Digital endowment · Aging society

1 Introduction

Since China officially entered the aging society in 1999, the degree of aging has continued to deepen at a faster rate, and the demand for pension services has expanded rapidly. By the end of 2017, there were 240 million people over 60 years old in China, accounting for 17.3% of the total population, of which 167 million people over 65 years old, accounting for 11.9%; according to the National Bureau of Statistics on the Development of Civil Affairs in 2021, by the end of 2021, there were 267 million elderly people over 60 years old in China, accounting for 17.9% of the total population, of which 191 million were over 65 years old, accounting for 13.50% .

China is accelerating into the era of aging, ‘silver wave’ has arrived. With our society. The main contradiction has changed. The living standards of our people are getting better and better, and the medical conditions and levels are gradually improving. The average life expectancy of the elderly population in China has been significantly extended, and the demand for old-age care has also increased. The elderly hope to get more comfortable old-age care services. In view of the above situation, the State Council issued the ‘Guiding Opinions on Actively Promoting’ Internet+ ‘Action’, which pointed out that it is necessary to ‘promote the development of smart health industry, rely on the existing Internet and social forces, and build a community-based pension information service platform to provide home-based care services such as nursing care, health management, and rehabilitation care.’

At present, Internet technology has entered a period of rapid development. China’s digital pension system is still under construction and exploration, and smart pension has

also emerged. However, the elderly are not very familiar with smart pension and digital system. The current traditional pension service model still occupies the main position, which hinders the process of modern pension. This traditional pension model has been difficult to meet the needs of the elderly. China's digital old service started late and developed slowly. Although some experiments have proved that intelligent old-age care service can make up for many shortcomings of traditional old-age care model, it faces many difficulties and challenges as a newly emerging industry in China.

This paper attempts to discuss the problems existing in the development of intelligent old-age care in China under the background of the digital development of aging, and hopes to solve the problems.

2 Literature Review

2.1 Data Sources

This study takes digital old-age care and smart old-age care as the theme keywords, and conducts a literature search on the China National Knowledge Infrastructure (CNKI) database (December 25, 2022), from the year of publication, keywords, research fields and related content. In the advanced search of CNKI, a total of 117 results were retrieved with CSSCI core journals and source journals as search conditions, and digital pension and smart pension as search terms. After cleaning the data, 102 articles were retained, and descriptive statistical analysis was conducted with the number of years published in the literature.

Through the analysis, it can be seen that the related research of digital intelligent pension presents two characteristics. First, smart pension and digital pension started late. From 2007, it began to show an increasing trend year by year after 2015, and began to rise rapidly in 2020. In general, the literature research in the past five years is obviously far more than that before 2017. This shows that the domestic research on smart old-age care started relatively late, but with the pilot of digital and smart old-age care in recent years, more and more people have come into contact with and learned the concept of digital smart old-age care. Through combing the existing literature, it is found that after the concept of "digital pension" was mentioned in the "new digital home-based pension community solution" published by Hu Liming in 2007, the concept of "information-based pension" appeared in the academic community in 2010. In 2011, the concept of "technology-based pension" appeared, and in 2012, the concept of "network-based pension" was put forward, developed into "intelligent pension" and "intelligent pension. " Until 2013, the academic community referred to the concepts of "digital pension", "information pension" and "technology pension" as "smart pension".

2.2 Keywords

Keywords are the key indicators to express the subject content of the literature and analyze the reliable concepts of related disciplines. Through the retrieval of keywords and the analysis of the content of the literature, the current research status is shown. In order to understand the current research field or a period of research status and hot

spots, as well as a period of development context and trends. In this paper, Citespace is used to classify and analyze 102 existing literatures, with a total of 74 keywords. The keywords with a frequency of 2 or more are sorted and counted according to the category. It is found that intelligent pension, pension service, digital economy, intelligent medical care, combination of medical care and pension, pension industry, intelligent community, digital divide and aging account for a large proportion. These high-frequency keywords reflect that the current research on digital pension and intelligent pension in China mainly focuses on these key nodes with large area. It shows that most researchers pay more attention to the industries and fields that provide services to the elderly, the health of the elderly, and the elderly overcoming the digital divide. In addition, some keywords only appear once, such as digital ecology, science and technology for the elderly, intelligent nursing, etc., indicating that these are still in the initial stage of research. Stage or research is relatively weak, to be further studied, may also become the direction of future research.

To sum up, the existing research on digital intelligent pension is of great significance to the digital intelligent pension under the background of aging in the new era.

3 Research Content

3.1 The Digital Intelligent Pension Status

At present, China is in the context of active aging, and more and more elderly people are actively participating in society. China 's regions have actively developed local smart old-age care services by drawing on the successful experience at home and abroad and combining regional characteristics, and actively carried out pilot demonstration exploration of smart old-age care services. By the beginning of 2022, a total of 167 demonstration enterprises, 297 demonstration streets (rural townships) and 69 demonstration bases have been created. Through information technology and management methods, we use digital innovation to innovate the new model of old-age care, realize the transformation of old-age care services, alleviate the pressure of home-based old-age care services, promote the old-age care service industry to respond to the diversified needs of the market in a timely manner, and breed various types of smart old-age care service models. At the same time, with the help of the concept integration of 'digitization' and 'combination of medical care', the 'Internet+ combination of medical care' pension model has been developed, and the adult social care system (ASC) and the national health service system (NHS) have been integrated to meet the multi-level and diversified health care needs of the elderly.

3.2 Digital Wisdom Pension Advantage

Digital intelligent pension is conducive to the optimization, reorganization and upgrading of domestic pension-related industries, mobilizing all resources, and improving the development of China's pension capacity. At present, the state is vigorously promoting smart pension and promoting the construction of a multi-level pension service system in a wide range of fields. On February 6, 2017, the "Smart Health Pension Industry Development Action Plan (2017–2020)" (Ministry of Industry and Information Technology

No. 25) was issued, which raised the development of smart health pension industry to the height of national strategy and put forward the wisdom.

In 2017, the State Council proposed the implementation of the “Internet+” pension project in the “13th Five-Year” development plan for the elderly. In 2019, the “Notice of the General Office of the Ministry of Industry and Information Technology, the General Office of the Ministry of Civil Affairs, the General Office of the National Health and Health Commission on the Implementation of the Third Batch of Pilot Demonstration of Smart Health Care Applications” was issued to standardize the pilot standards, continuously expand the scale and coverage of the pilot, point out the direction for the development of the pension service industry, promote the implementation of relevant policies, and ensure the implementation of smart pension services.

In the long run, under the influence of complex factors such as traditional pension concepts and actual national conditions, China’s pension method should be based on community home care for a long time. The use of digital intelligent old-age care is helpful to realize digital empowerment and intelligent old-age care, so as to achieve accurate old-age care. At the same time, it can alleviate the pressure brought by public pension and meet the diversified, personalized and multi-field pension needs of the elderly. In order to accurately detect the physical health of the elderly, provide accurate services.

4 The Problems Existing in the Current Digital Intelligent Pension Model

4.1 Macro-level

At present, the design, function and operation of the digital intelligent old-age care model are still relatively simple. It is still in the exploratory stage and the primary level. It has not fully formed a comprehensive, composite, efficient and stable system. At the same time, the information between the communities has not yet been open and shared. The information and data between the communities and the old-age care institutions are in a fragmented state, and there information and repeated work, thus increasing the workload and work costs. And the lack of management of the pension industry, there is no set of unified management standards and industry access evaluation standards, resulting in chaos in the market of pension products, lack of management and planning of institutions, and even vicious competition between different pension institutions, thus undermining the environment of the pension industry.

The practical operation of digital intelligent old-age care lacks a comprehensive investigation of the elderly group. The old-age care needs of different elderly groups are different. Under the guidance of social security policies, they focus on caring for vulnerable groups. In addition, most of the current service models of smart pension in China only focus on the development of smart pension science and technology, thus ignoring the humanized service of smart pension and the needs of the elderly themselves. Digital smart pension needs to have humanistic attributes and humanistic care. In the context of big data, it is also necessary to cooperate with legislation and policies to increase the privacy protection of the elderly. While sharing information, we should also improve the protection of the privacy of the elderly.

It still needs to work hard to realize the framework of the development of smart old-age care. The architecture can be established by linking and integrating information network system, intelligent technology system and related auxiliary system. The subdivided business can be divided into sub-directories and sub-menus to better meet the subdivided business needs and personalized service needs.

4.2 Micro-level

From the micro level, one of the reasons for the slow development of smart old-age care under the digital background is that the lack of professional technology and service personnel within the industry makes it difficult to guarantee the quality of service. Although relying more on information technology in the digital background, the professional talent team is an important guarantee for the sustainable development of digital pension. Digital intelligent old-age care requires service personnel to have the basic ability to use intelligent old-age care equipment, systems and products. Relevant service personnel need to master information technologies such as cloud computing and big data, and have the professional ability to control intelligent systems and effectively process information data. At the same time, it also requires the service personnel to have a certain understanding of the pension policy and social security policy, and also have a certain professional ability of the elderly social workers and community social workers, as well as the basic medical care, psychological counseling, emergency first aid and other professional knowledge of the elderly. However, in the field of intelligent old-age care under the current digital background, there is a serious lack of old-age service personnel, medical staff, and professional and technical personnel. Employees generally lack professional skills, unable to understand the real needs of the elderly in a timely and effective manner, and it is difficult to deal with the professional problems in the process of intelligent pension services. Therefore, it is difficult to ensure the quality and level of services.

In the face of the current situation of low supply and demand of smart elderly care services in China, we should pay attention to the spiritual and emotional communication needs of the elderly, use information technology to enrich the spiritual world of the elderly, avoid the weakness of the elderly's actions through modern intelligent technology, give full play to the advantages of the elderly's rich experience, and meet the needs of the elderly to realize their self-worth.

5 Conclusions

The intelligent old-age care in the digital background of China is in a period of rapid development, and it is also in its infancy. There are many difficulties and challenges, and there are many problems to be solved. The future development trend of digital intelligent pension shows the characteristics of intelligence, scale, personalization and diversification. Coordinating the development of smart old-age care in urban and rural areas, allocating superior resources, integrating debris resources, overcoming difficulties, breaking information barriers and repeatedly collecting data, realizing high-quality services for data sharing and resource exchange, promoting the construction of smart

old-age care service cloud platform, and creating cross-departmental and cross-regional connectivity. In order to improve the applicability and inclusiveness of the intelligent old-age care service system built under the digital background, we should fully consider the physiological and psychological characteristics of the elderly, strengthen the aging of intelligent old-age care products, and create a digital environment suitable for the life of the elderly. At the same time, we should pay close attention to the core needs of the elderly at different stages of development, especially pay attention to the emotional care and spiritual comfort of the elderly, optimize the intelligent old-age care service integrated with family, community and institution, create a modern and digital intelligent old-age care environment, and highlight the ‘diversification’ and ‘personalization’ of intelligent old-age care service content.

References

1. Qian Xu, Chunbao Zhang. Smart Elderly Care Service Problems And Countermeasures [J]. *Cooperative Economy and Technology*, 2020 (05): 182–183.
2. Lanxu Xie. Smart Elderly Care: Let the “Empty Nest Elderly” No Longer be Alone [J]. *Shanghai Information Technology*, 2014 (04): 50–52.
3. Cheng Zhang, Jie Li. Research on the Status Quo and Standardization of Smart Pension at Home and Abroad [J]. *China Standardization*, 2018 (20): 199–201
4. Jie Zhou. Overview of the Current Situation of Smart Pension Research in China [N]. *Shanxi Economic Daily*, 2020-10-27 (007).
5. Mei Yang. Overview of China’s Smart Pension Research [J]. *World of Labor and Social Security*, 2020 (21): 26–27.
6. Yiming Liu, Juan Li, Lin Ye. Development Status and Countermeasures of Smart Elderly Care [J]. *Cooperative Economy and Technology*, 2020 (12): 151–153.
7. Yan Wei, Yun Xu. The Dilemma and Path of the Development of Smart Health Pension Industry—Taking Shaanxi Province as an Example [J]. *Journal of Xi’an University of Finance and Economics*, 2020, 33 (03): 37–45.
8. Yuling Cao, Junmei Mao. Research on the Innovative Development of Smart Elderly Care Services in China in the New Era [J]. *City*, 2020 (03): 25–31.

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