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Policy Support and Demand Response Strategies for Smart Elderly Care Service Platforms

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Abstract: *As China's population aging intensifies, the drawbacks of traditional elderly care models have become increasingly prominent. Exploring new elderly care models has become a key measure to address the challenges of aging. Since 2011, China has introduced policies related to smart elderly care, promoting the transformation of the elderly care field towards intelligence and technology. New-generation information technologies such as artificial intelligence and big data have empowered the development of the elderly care industry. In this context, based on relevant national policies, this paper analyzes the important significance of smart elderly care, and based on the real needs of the elderly, discusses the problems existing in China's current smart elderly care service platforms through the SWOT analysis method, and then puts forward corresponding solutions.*

Keywords: *Aging, Smart Elderly Care, SWOT Analysis, Countermeasures*

1. Introduction

China's life expectancy has increased from 35 years in 1949 to 79 years in 2024. Such a high average life expectancy is due to the inclusiveness and innovation of the national medical system. As the traditional elderly care model gradually exposes many problems in dealing with the increasingly large elderly population, smart elderly care has emerged as a new direction to solve the elderly care dilemma. However, behind the vigorous development of smart elderly care, there are still many problems to be solved. With the progress and development of various fields in China, smart elderly care has gradually become the development direction of the general trend. Lian et al. (2025) [1] pointed out that the construction of smart elderly care data resources needs to build a multi-subject collaboration framework and a three-dimensional operation model. By integrating subject, object and carrier resources, it provides theoretical and practical support for the construction of smart elderly care data system and promotes multi-subject collaborative participation in smart elderly care services. In the development of smart elderly care, improving the satisfaction of the elderly is an indispensable part. Just as Kong (2024) [2] proposed, through the KANO model to analyze the actual needs of the elderly for smart elderly care, divide the needs into necessary, expected and attractive levels, build a smart elderly care data sharing platform covering five modules including medical care and safety monitoring, and put forward system, technology and organization guarantee strategies to improve the service satisfaction of the elderly. Smart elderly care has brought many extraordinary help to society and people in many aspects. For example, it plays an important guiding role in building smart communities. For example, Song (2025) [3] designed a smart community elderly care construction plan based on the cloud computing platform. Through the smart application of the management platform and the front-end perception system, the quality of life and service efficiency of the elderly care community are improved, providing technical support and practical guidance for the development of smart elderly care.

However, in the current development situation, there are still many problems in the popularization and use of smart elderly care in daily life. Wu and Chen (2025) [4] summarized the theoretical and practical significance of the research on the technical ethics of smart elderly care, providing a new perspective and theoretical support for related research and practice, and also expressing the problems caused by the low knowledge level of current elderly users in the use of technology. Jia and Guan (2024) [5] pointed out that the problem of spatial structural mismatch of elderly care resources in Chengdu-Chongqing area is serious, and the imbalance between supply and demand between urban and rural areas and regions is significant. It reflects the problem of uneven regional use. Wu and Sun (2024)

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[6] pointed out that the smart elderly care services in Liaoning Province have problems such as a single publicity method (relying on news broadcasts/announcements) and lack of experience channels. Xun (2024) [7] found through interviews and questionnaires that the publicity of smart community elderly care in Linfen City is insufficient, which provides methods for the promotion of elderly care services, but also shows that the elderly have few channels to learn about smart elderly care service platforms. Zheng (2024) [8] showed that more than half of the elderly in Harbin have not used smart elderly care services, and proposed methods to eliminate the elderly's doubts, but also indirectly indicates that the usage rate of elderly users is not high.

Under the current development trend of elderly care services, this study investigates and analyzes the usage status of users of smart elderly care service platforms and the understanding of the public on smart elderly care service platforms, deeply analyzes the existing problems of smart elderly care service platforms, and then puts forward practical countermeasures, providing a strong reference for improving the satisfaction of the elderly with smart elderly care service platforms and the practicality of smart elderly care service platforms, promoting smart elderly care service platforms to better serve the elderly, and improving the security and happiness of elderly life.

2. SWOT Analysis of Smart Elderly Care Service Platforms

2.1 Strengths

2.1.1 Policy Support and Technical Empowerment

The state and local governments have issued a number of policies, including industrial planning, technology promotion, talent training, etc., to provide guarantees for the development of the platform. Since 2011, China has gradually introduced smart elderly care policies (such as the "Opinions on Deepening the Reform and Development of Elderly Care Services") to promote the transformation of the industry towards intelligence. Emerging technologies such as artificial intelligence, big data, and the Internet of Things help improve the platform's functions and enhance service efficiency.

2.1.2 Making up for the Shortcomings of Traditional Elderly Care Models

It can integrate various elderly care resources. For example, the national elderly care service information platform integrates a large amount of institutional and facility information, promotes the rational allocation of resources, and alleviates the uneven regional distribution. For example, it solves the problems of weak family elderly care functions and uneven service quality of institutional elderly care. Through smart communities and network coverage, it provides nearby and convenient elderly care services, such as health monitoring and emergency response.

2.1.3 Urgent Social Needs

China's aging is accelerating, and the current society has become a moderately aging society with huge market potential, which is in line with the strategic direction of tapping consumption potential under the "large country economy".

2.2 Weaknesses

2.2.1 Imbalance of Regional and Technical Resources

The coverage rate of intelligent terminals and 5G networks in rural areas is low, and there are significant differences in aging-appropriate transformation between urban and rural areas. The network security protection capabilities in underdeveloped areas are weak, and there is a risk of data leakage. Smart elderly care demonstration enterprises are concentrated in the east, while the development in the central and western regions is lagging behind, with a large regional gap, which is not conducive to overall promotion and development.

2.2.2 Mismatch between Platform Design and User Needs

The adaptability between technology application and the needs of the elderly needs to be improved. Some elderly people are not familiar with the operation of intelligent devices and platforms, which affects the user experience. 58.06% of the respondents thought the operation was complicated, and 45.16% thought the functions were incomplete, unable to meet diversified needs and lacking offline service support. And from the data that 41.94% of the elderly learned about the platform through their children and 35.48% through community publicity, it can be clearly seen that service promotion relies

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on a single channel.

2.2.3 Infrequent Use

The elderly have low trust in elderly care institutions. In 2020, the proportion of people admitted to elderly care institutions was only 0.73%, which also affects the promotion of the part involving institutional elderly care services in the smart elderly care service platform. 61.29% of the elderly rarely use the platform, thinking it is “dispensable”, and only 6.45% use it daily.

2.3 Opportunities

2.3.1 Dual Drive of Policy and Market

The state promotes the “connection of points into a network” of the urban and rural elderly care service network, and policies encourage the coordinated development of rural and urban elderly care. The acceleration of aging has spawned diversified needs (such as medical care, social entertainment), providing directions for the expansion of platform functions.

2.3.2 Technical Iteration to Optimize Experience

The rapid development of new-generation information technologies such as artificial intelligence and big data helps to expand and optimize platform functions, such as realizing accurate health prediction and personalized service recommendation. For example, 5G and cloud computing technologies can improve network delay problems and enhance the service stability in underdeveloped areas. It can also develop aging-appropriate interfaces (such as voice interaction, one-click help) to reduce the operation threshold.

2.3.3 Innovation in Publicity and Service Models

The increased social attention to elderly care issues is conducive to attracting more social capital and talents to invest and promote the development of the industry. First, it can be promoted through multiple channels such as TV, radio, and community activities to expand the popularity of the platform. Second, explore the “online + offline” integration model to enhance user trust, such as community service stations assisting in use.

2.4 Threats

2.4.1 Unbalanced Urban and Rural Infrastructure

The backward infrastructure in rural areas may aggravate regional inequality in elderly care services, leading to the phenomenon of “digital abandonment of the elderly”.

2.4.2 User Acceptance and Ability limitations

The elderly have low literacy rates and weak technical adaptability (some need long-term training), which may lead to rejection of intelligent services. Traditional elderly care concepts (such as relying on children) hinder the promotion of the platform.

2.4.3 Security and Competition Risks

Data leakage and network attacks threaten the credibility of the platform (especially in rural areas). In market competition, if low-quality services appear, they may damage the overall image of the industry.

3. Analysis of the Current Usage Status of Smart Elderly Care Service Platforms

To understand the satisfaction and usage of the public and users of smart elderly care service platforms with smart elderly care service platforms, we designed two questionnaires, respectively for the public and elderly users, and distributed the questionnaires to the public and users of smart elderly care service platforms. After statistics, we finally recovered 101 and 31 valid questionnaires respectively. Next, all the charts and data mentioned in the article are directly derived from the results of these two questionnaires.

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3.1 Regional Imbalance of Use

Regarding the level of understanding of smart elderly care, as shown in Figure.1, respondents in the western region have the highest proportions of those who report a good understanding and a relatively good understanding, accounting for 53.33% and 51.72% respectively. This shows that the residents in the western region pay more attention to the wisdom of providing for the aged.

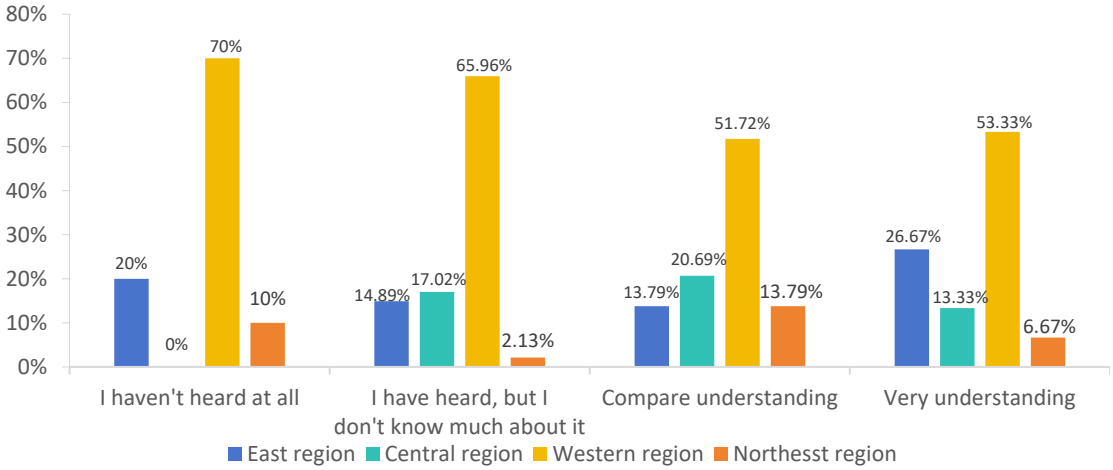

Figure 1: Regional Distribution of Intelligent Pension Service Platform.

3.2 Olderly People with Different Educational Level

In the understanding of the wisdom of old age, see Figure 2, 71.29% of the respondents had bachelor degree or above. And in the option of understanding, the proportion of bachelor degree or above is higher than other educational levels. Especially in the 'very understanding' and 'more understanding' options, the performance is particularly prominent.

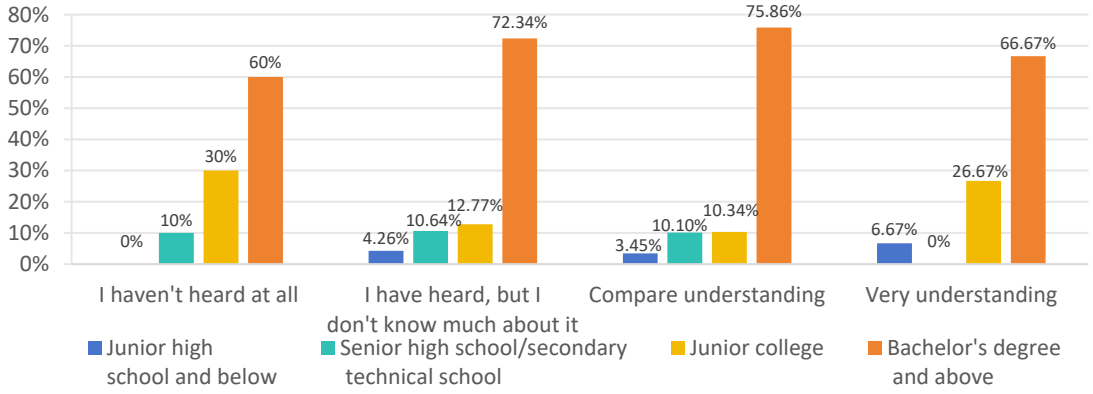

Figure 2: Education of users of intelligent service platform for the aged.

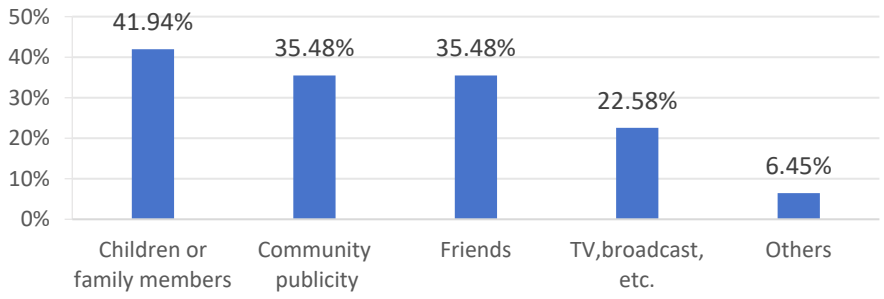

Figure 3: The channel for users to know the intelligent service platform for the aged.

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3.3 Relatively Few Channels for Accessing Smart Elderly Care Service Platforms

At present, the sources of information for the elderly are mostly children or family members, and other sources of information are less. As shown in Figure 3, 41.94% of the respondents learn about the intelligent pension service platform through their children and family members, while 35.48% learn about it through community promotion. A small number of the respondents know it through television radio, or friends. This indicates that the platform requires the need for strong publicity. If the elderly understand the wisdom service platform, it can give the elderly more help.

3.4 Most Users Using It Infrequently

The low frequency of the elderly using the intelligent old-age service platform may be the reason for the low practicability of the intelligent old-age service platform. From Figure 4, we can observe that, 61.29% of the elderly rarely use the intelligent pension service platform, using several times a week accounted for 22.58% , which shows that for many elderly, use it a few times a week to meet their needs. only 6.45% use the intelligent pension service platform every day.

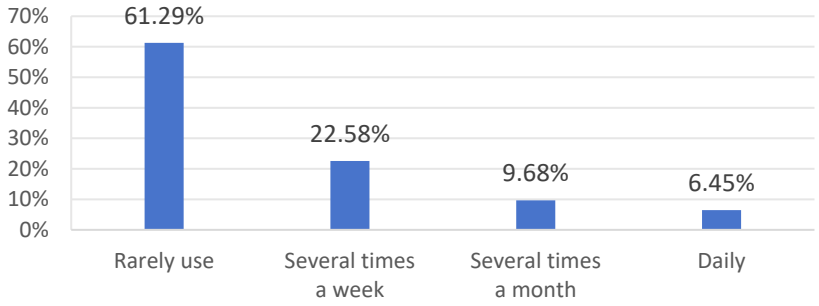

Figure 4: Frequency of user use of intelligent pension service platform.

4. Difficulties in Using the Platform

4.1 Imbalance between Geographical Infrastructure and Technological Resources

Inadequate coverage of hardware facilities, first, intelligent terminals (such as health monitoring equipment) in developed areas of high penetration, but the equipment coverage rate in rural areas is low. Second, the suitable aging transformation and the intelligent community construction are concentrated in the city [9]. Network construction lags behind: On the one hand, 5G technology and high-speed networks are first applied in developed areas, while rural areas have insufficient network coverage; On the other hand, the network security protection ability difference is big, the undeveloped area is vulnerable to the data leakage threat [10].

4.2 The Elderly with a Low Level of Knowledge

Many elderly people today have a relatively low level of education. This is because, due to special circumstances in their youth, most of them lost the opportunity to receive education. The elderly people received dialect instruction during their younth. Having lived in relatively fixed areas for a long time, dialect is enough in daily communication, lack of need and scene to speak Mandarin. With age, people's language habits become solidified, which makes it somewat difficult for the elderly to speak Mandarin.

4.3 Less Access to Sources of Information

Through the survey, we can analyze and conclude that the vast majority of users learned about this platform through diverse channels. However, there are still some users who only became aware of it through family members. Therefore, we can observe that most elderly people have relatively limited access to information and are unwilling to seek information from the outside world—a mindset that has hindered their use of the smart elderly care service platform.

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4.4 Lower Usage of Intelligent Service Platforms

Intelligent pension service platform should be used once a day. But according to the current survey results, most of the elderly use it less frequently, and many of the elderly believe that the intelligent pension service platform is redundant, some users only open it once a month. This reflects most of the elderly because the wisdom of service platform is not enough understanding, it also shows that the intelligent service platform is difficult to attract the attention and interest of the elderly in many aspects.

5. Solving Problems Based on the Intelligent Elderly Care Service Platform

5.1 Regarding the Issue of Regional Imbalance

In terms of policy support and financial support, regarding policy support, establish a multi-departmental collaboration mechanism, actively strive for policy support such as subsidies and tax incentives; Participate in the formulation of standards and strictly carry out actual improvements in accordance with the standards. Regarding financial support, it is possible to establish a diversified financing system. Secondly, establish new business model, and afterwards, cooperate with public welfare organizations to seek donations and project funding.

In terms of resource sharing and technology transfer, regarding resource sharing, one is to establish a resource database, integrate resources from elderly care institutions, communities, and medical institutions, form an online resource library, facilitates user inquiries. The second point is to establish a cooperation platform, establish a service provider cooperation platform, and promote resource sharing and business collaboration. The third is the data sharing mechanism. Under the premise of protecting privacy, it promotes the sharing of elderly care data to enhance service efficiency.

Regarding technology transfer, one is modular design, modularizes the platform functions, and facilitates the output to other institutions. The second point is to open up the interface, provides an open interface to facilitate third-party access and enrich the platform functions. The third point is technical training, provides technical training for elderly care institutions to enhance their level of intelligence and modernization.

In terms of infrastructure construction, regarding hardware facilities. The first is the widespread adoption of intelligent terminals. The second is the adaptation to elderly-friendly design, carrying out age-friendly renovations in elderly care institutions and communities. The third point is the construction of data centers aiming to establish a data center to ensure the security of platform data. Regarding network facilities, firstly, by network coverage, we should improve the network coverage of elderly care institutions and communities, and ensure smooth operation of the platform. The second point is about network security. Strengthen the protection of network security and ensure the security of platform data. The third point is the application of 5G technology, utilizing 5G technology to enhance the response speed and service quality of the platform. In terms of implementation, each household can be equipped with 5G technology, and it can be connected to the community or county service centers in various regions, facilitating data management.

5.2 Regarding the Issue of Elderly People's Literacy and Cultural Level

For promotion and educational rehabilitation aspects, on one hand, businesses can simplify operational procedures. Communities may communicate with the development team of the smart elderly care service platform to carry out elderly-friendly modifications on the platform—simplifying the design interface and operational processes, and eliminating unnecessary steps—so that elderly people who are illiterate can also use it easily [11]. On the other hand, communities can organize volunteers to provide training courses for the elderly. During these courses, graphic operation manuals can be created, with a large number of pictures illustrating operational steps, and face-to-face teaching can be conducted to help the elderly master skills through practice.

For the smart elderly care service platform, functions such as voice commands, voice navigation, and voice feedback can be equipped to allow the elderly to complete operations via voice. Considering that some elderly people may not speak Mandarin or cannot fully express their needs, the voice system can add dialect recognition and fuzzy semantic recognition functions. For example, phrases like "find a doctor" or "feeling unwell" can trigger the corresponding functions. The hardware should also undergo elderly-friendly modifications: the device interface retains only core buttons, is equipped with a

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3-second anti-misoperation function, and buttons for different functions can be distinguished by different protrusions and marked with Braille [12].

In terms of social supervision and family assistance, first, we can establish a linkage mechanism between "family and society", each elderly person's account must be linked to the contact information of at least two family members or neighbors. Second, social institutions can use regional chain technology to encrypt health data,the corresponding department can view indicators such as the alarm handling rate and equipment coverage rate of the elderly. Thirdly, a 48-hour response mechanism for service complaints can be established, for cases that remain unprocessed after the time limit, they will be automatically reported to the higher-level regulatory authorities.

5.3 Addressing Limited Access to Information

Firstly, to ensure that more elderly people can also learn about it, we should launch large-scale promotion efforts to raise awareness of the smart elderly care service platform among more people. Secondly, conduct diverse promotional campaigns to expand the reach of the platform, enabling individuals from various professions and age groups to become familiar with it. Thirdly, we should intensify the promotion efforts and increase their frequency to achieve the goal of word-of-mouth dissemination, helping more elderly individuals understand the smart elderly care service platform.

5.4 Addressing Low Usage Frequency of the Smart Elderly Care Service Platform

We should gain in-depth insights into the daily lives of the elderly, and based on this, design practical functions that meet their actual needs. We should explore the information preferences of the elderly, build information access channels that align with their interests to enhance the attractiveness of the elderly care service platform, and guide the elderly to use the platform proactively. Meanwhile, we should also establish an emergency support system with efficient response capabilities to ensure that timely and effective support and assistance can be provided to the elderly in emergency situations.

6. Conclusion

The aging population issue is becoming increasingly severe, and the traditional elderly care model is plagued by numerous drawbacks. Smart elderly care has emerged as a key solution to address the challenges of elderly care. Through surveys and analysis of people's awareness of the smart elderly care service platform, this paper deeply explores the current shortcomings of the platform and the problems existing in its usage, and proposes corresponding countermeasures. We will continue to pay attention to the development trends of smart elderly care service platforms, continuously improve and rectify the shortcomings of the platform and the problems in its usage, and provide solid support and assistance for the convenience and well-being of the elderly's lives.

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