

Research on implementation of smart elderly care service policy in Heilongjiang Province based on Smith model

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Abstract: Our country has entered an aging society at present. With the rapid development of modern information technology, the smart elderly care service industry is making continuous progress. Smart elderly care with new technologies as the core helps to improve the quality of elderly care services. High-quality development of smart elderly care service industry is an important means to actively cope with the aging population. The report of the 20th CPC National Congress pointed out that joint efforts should be made to promote the high-quality development of intelligent elderly services, provide high-quality, intelligent and inclusive services for the elderly, better achieve the goals of elderly services, and actively respond to the national strategy of population ageing. In turn, it will solve the previous problems of smart elderly services, improve the quality of life level of the elderly group, and enhance their sense of well-being. Based on Smith's model theory, the problems faced during the implementation of the smart elderly service policy are analyzed with Heilongjiang Province as the research object. In this regard, the government should improve the policy system and establish relevant policies and laws; deal with the relationship between the executive agencies and enhance the efficiency of smart elderly services; improve the motivation of the target group and strengthen the construction of the professional talent team; optimize the environment for the implementation of the policy and increase the investment of government funds.

Keywords: Elderly services; Intelligent Elderly Services; Smith's model; ageing society

1. Issues raised

According to the National Bureau of Statistics, by the end of 2021, there were 264.02 million older persons aged 60 years and over, accounting for 18.9 percent of the total population. At present, China's demographic structure is characterized by a large number of elderly people, a serious degree of ageing and an accelerated rate of ageing, and we will face more challenges related to aging. Therefore, with the continuous progress of technology and the gradual development of new technologies, we can make use of these emerging technologies to promote the transformation of elderly services towards intelligent aging, so that information technology can be better used in elderly services, and achieve the innovation of elderly services in all aspects. Intelligent aging refers to the use of a new generation of information technology, such as the Internet, the Internet of Things, cloud computing, etc, to establish an information-based elderly care service platform under the premise of meeting the basic elderly care services for the elderly groups, and to further establish a comprehensive elderly care service model, so as to solve the previous problems of elderly care services^[1]. In the context of population aging, Heilongjiang Province should now actively provide a better social environment for the elderly, further improve their living standards, and need to meet the diversified needs of the elderly.

2. Analysis of the framework of smart elderly services based on Smith's model

One of the classic models for public policy analysis is the Smith model. The theory is that the policy implementation process will be affected by the four aspects of the ideal policy, in which these four aspects include the policy itself, the implementing agency, the target group and the policy environment. Based on the Smith's model of policy implementation, the implementation process of smart elderly policy will be analyzed from four important aspects (see Figure 1).

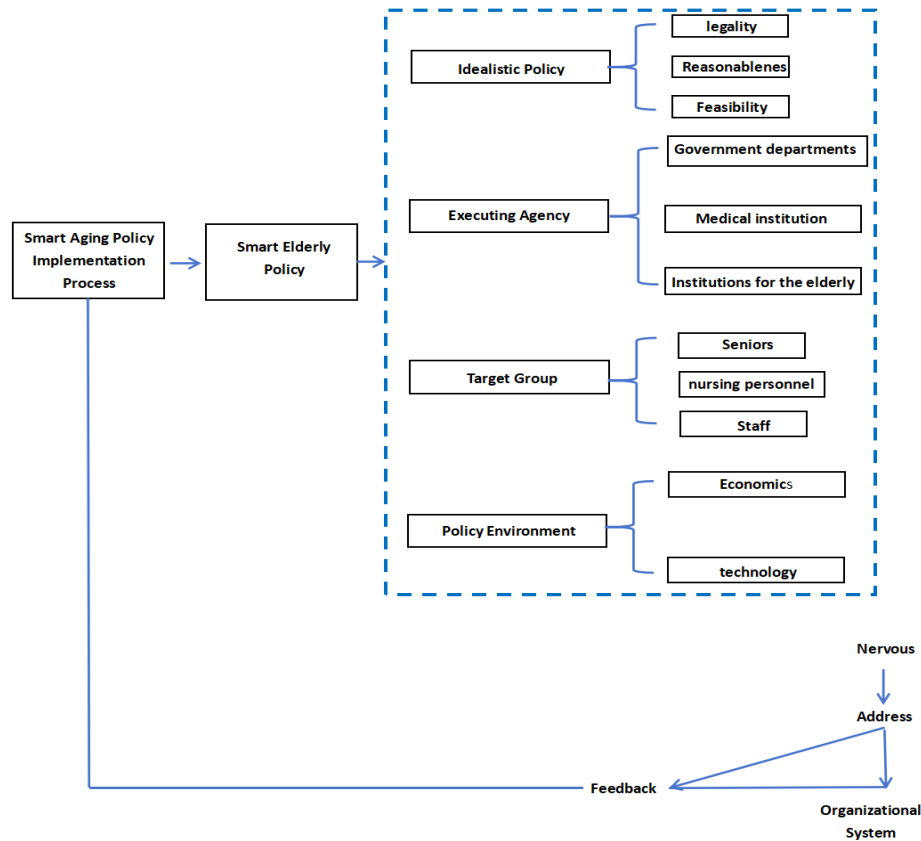


Figure 1 Schematic diagram of the policy implementation framework for smart elderly services under the Smith model

In terms of policy, rationality, legitimacy and feasibility of smart ageing policy content are required for idealized policies.

In terms of implementing agencies, the main implementing agencies of the smart pension policy are government departments, medical institutions, pension institutions and other main institutions, as well as the staff of these relevant institutions' understanding of the pension policy, the implementation content and methods, and the management ability will affect the implementation effect of the policy.

From the viewpoint of target group, the target group of the smart elderly policy includes the elderly, nursing staff of medical institutions, staff of elderly institutions and other relevant personnel. If the smart elderly policy is to be better implemented, it is necessary for the relevant staff of the implementing agency of the policy to actively participate in the policy, pay attention to the relevant needs, living habits, concepts and ideas of the elderly group, and understand the interests and needs of the elderly further from it. And we can further the interests and needs of the elderly, provide high-quality relevant security and higher living standards for the elderly, and meet the needs of the elderly.

In terms of the policy environment, the smart elderly policy environment will be affected by a number of factors, such as the economy, technology and other factors. As the country develops and progresses, these factors will continue to change, and the speed of change will accelerate, which will further affect the effectiveness of the implementation of the smart elderly policy.

3. Analysis of the Implementation Effect and Difficulties of the Policy on Intelligent Elderly Services in Heilongjiang Province

In order to better implement the smart elderly services, the state has introduced a number of related policies, and Heilongjiang Province also based on the policies formulated by the state, the introduction of smart elderly policies in line with the conditions of Heilongjiang Province. In 2020, Heilongjiang Province proposed smart and healthy elderly care services, contacted the new generation of information technology enterprises, electronic information manufacturing enterprises and other old-age care needs,

developed products and services suitable for the elderly and other policies, expanded and applied cloud computing and other service fields, and promoted the development of medical care, family medicine and smart and healthy elderly care services; On May 12, 2023, Heilongjiang Province held a National Scientific Quality work conference in Harbin to promote the in-depth implementation of the Outline of the National Scientific Quality Action Plan (2021-2035), and pointed out that the use of scientific quality of the elderly to improve and help "smart elderly care".

Some difficulties have arisen when using the Smith model to analyse the smart elderly service. The executing agency in Smith's model includes pension institutions, and in the process of implementing the smart pension service policy, some pension institutions as well as the corresponding staff choose the wrong solution in the process of solving the actual needs of the elderly, and there is a mismatch of resources and other problems, which results in a waste of resources, and the pension services that the elderly actually receive are not the needs that they desperately want^[2]. For example, some senior care institutions provide the elderly with a variety of intelligent machines and systems, in order to make the elderly get more satisfied with the needs of the service, but the elderly diversification and other reasons for the emergence of a variety of senior care needs, and can not adapt to such a complex environment, resulting in the low use of intelligent equipment, leading to a waste of resources. In addition, the target group of Smith's model also includes the elderly group, the elderly face the age of intelligence, the emergence of elderly service demand identification difficulties, the difficulty of personalized supply and demand rises. Although the content of the older people's needs is not very different, the classification method based on emerging technologies such as the Internet is not perfect, which leads to the elderly not being able to identify the needs of elderly care services, which in turn makes the feedback of their actual needs slower, and affects the matching of the needs of intelligent elderly care services^[3].

3.1 Effectiveness of the implementation of policies on smart elderly care services in Heilongjiang Province

First, relying on new-generation information technology, we have put into operation key projects on smart ageing. In order to promote enterprises in the province to invest in the smart elderly care industry, Heilongjiang Province has taken a series of measures and achieved remarkable results. Each county and city has its own demonstrated results in integrating next-generation information technology with senior care services: In 2018 Suihua City, Heilongjiang Province, invested in the use of a key project on smart elderly care, which combines a variety of elderly care services and builds a smart elderly care speciality town in order to attract more elderly people to participate in it; In 2021, Intelligent Healthy Aging Demonstration Enterprises in Harbin, Heilongjiang, to build an intelligent healthy aging service system using Internet of Things technology, intelligent sensing and other technologies.

Secondly, We will launch a new platform for smart elderly care and explore a new model for smart and healthy elderly care. In the context of the digital economy, the combination of new-generation information technology and the digital economy has improved the original smart senior living platform and formed a multifaceted smart senior living service platform, which facilitates the daily habits of the elderly and promotes senior living services in a comprehensive and precise manner. For example, in June 2021, Daoli District of Harbin set up a "community elderly meal intelligent cloud platform", where elderly people need to order meals on their mobile phones, so that they can enjoy fast food delivery services without having to cook by themselves^[4].

Thirdly, with smart services at the centre, smart products are used to enhance the quality of life of the elderly. In the area of smart services, an increasing number of smart products are being used in homes, communities and organizations providing services to older people, using technologies such as human-computer collaboration, computers and data storage to meet the needs of older people. In 2022, Heilongjiang Province, HIT Robotics Group and Sokol Co. reached a cooperation intention in the field of elderly care, and in the future, they will jointly research and develop intelligent robots and other intelligent products to provide intelligent elderly care services for the elderly.

3.2 Difficulties in the implementation of policies on smart elderly care services in Heilongjiang Province

Firstly, the system standards for smart ageing policies are not yet uniform. Wisdom elderly service is a quasi-public product, the main body of supply and the target group are with diversified characteristics, there is no uniform standard for wisdom elderly service in Heilongjiang Province,

service specification, quality monitoring, risk prevention, information linkage and other aspects still need to be strengthened. In the face of such a form, the implementation of smart ageing policies in Heilongjiang Province is being improved, but there is a lack of planning and research paths, the assessment standards of smart ageing services vary from place to place, the corresponding policies implemented in different cities are different, and the standard framework of smart ageing products and services is not yet clear in most areas.

Secondly, the planning of policy enforcement agencies for smart ageing is not perfect.

From the perspective of government departments, at the present stage, the development of the intelligent elderly service platform mainly depends on the development of the Internet, cloud services and other technologies, which requires a large amount of financial support, and the government's financial support for the intelligent elderly service platform is insufficient, which slows down the process of the construction of the infrastructure of the intelligent elderly service platform, and affects the speed of the development of the intelligent elderly service.

From the perspective of healthcare organizations, healthcare workers should be able to provide the necessary elderly services to the elderly population, but their lack of systematic training opportunities on smart ageing has resulted in healthcare workers not being able to have a comprehensive understanding and knowledge of the systems related to smart ageing, which prevents them from popularizing the relevant smart ageing services to the elderly. And there are also medical staff with low professional competence and low education who are not able to better engage in the industry of intelligent elderly services, which cannot meet the needs of the elderly groups and reduce the sense of well-being of the elderly.

From the side of elderly care organizations, they are the key organizations that implement the policy of smart elderly care services. As Heilongjiang Province faces the increasingly serious problem of population aging, the market for intelligent senior care services seems to be expanding, but in fact, some of the intelligent senior care enterprises in Heilongjiang Province have long been in a state of sustained losses, and the scale of senior care institutions is not optimistic about the profitability of the long-term competitive situation. And due to the different scale of development of smart pension investment projects in counties and cities, the Heilongjiang Provincial Government is currently difficult to introduce a subsidy policy for smart pension services suitable for each pension organization in the province, so pension organizations can only find their own way out.

Thirdly, the target group for smart ageing policies is not highly motivated. The smart elderly policy gets a complex structure of target groups, which mainly includes smart elderly service platforms, medical workers and the corresponding elderly groups in elderly care organizations. Thirdly, the target groups corresponding to smart elderly services are not highly motivated, which hinders the implementation of smart elderly service policies and fails to meet the needs of the elderly for smart elderly services.

At the level of government departments, the lack of financial support for elderly service platforms has led to a reduction in the intelligence of elderly service platforms, which is still limited to the previous level of intelligence. And the elderly care service platform has a large workload, the lack of social recognition of the platform staff, and the shortage of high-quality talents hinder the development of the smart elderly care service industry, and the lack of professional talents leads to the slow development of the smart elderly care service platform. Various regional governments have requested to start setting up smart elderly service platforms, but there is no uniformity in the platform construction process, and after the completion of the service platform is not at a high level, the information and data of the elderly are fewer, limited to their basic information, health data, and the content of the service, and the policy system and regulatory information of the smart elderly service platforms are not comprehensive^[5].

At the level of health-care institutions, health-care workers should be able to provide specific services to meet the physical, psychological and social needs of older persons. In practice, however, the lack of training opportunities for the smart age system for general healthcare workers, who are mostly busy with their own speciality training, has resulted in their low proficiency in the use of the smart age system. The number of medical workers specializing in intelligent ageing is relatively small, and the low social recognition of this profession compared to that of specialists, and the lack of attractiveness in terms of wages and salaries, have made many medical workers reluctant to engage in the intelligent ageing industry.

With regard to the elderly institutions, due to age, lack of knowledge, backwardness of concepts

and consumption habits, and the fact that the institutions do not provide some lectures related to new technologies, the elderly living in the institutions do not have the correct knowledge and attitudes towards the Internet, nor do they have the necessary knowledge and skills to be accustomed to using the Internet, or even do not use the Internet at all, which leads to the low level of participation of the elderly due to the barriers to the use of the Internet technologies.

Fourthly, the implementation environment for smart ageing policies is not satisfactory enough.

At the economic level, there are significant geographical inequalities in the care of older people, with smart ageing services being more comprehensive in some of the more economically powerful areas, allowing for a wide range of services for older people. In economically deprived areas, due to economic and resource constraints, not enough financial support is given, and the elderly are unable to enjoy quality intelligent elderly care services, and the development of intelligent elderly care services is relatively lagging behind.

At the technological level, smart elderly care makes use of information technology such as the Internet, big data and artificial intelligence to tailor elderly care services to the needs of the elderly. At present, most of the smart service products provided by smart pension in Heilongjiang Province are still limited to emergency calls, electronic bracelets, electronic blood pressure monitors and other devices due to low penetration and limited technology. In the face of this situation, we can vigorously develop smart elderly care service technology with local characteristics as the focus, use the Internet, Internet of things and other technologies to find the elderly's needs for elderly care service, understand their current needs for elderly care service, and provide targeted elderly care services^[6].

4. The Optimization Path of Intelligent Elderly Service Policy in Heilongjiang Province under the Perspective of Smith's Model

4.1 Improvement of the policy system and establishment of relevant policies and laws

A complete framework is needed for the smart elderly service system, so the government should formulate a system for the smart elderly service industry, release relevant regulations and policies in a timely manner, and further optimize the smart elderly service system around the world. At present, our country lacks a sound relevant system as well as scientific and uniform institutional standards and a basis for development. Therefore, the government should formulate and improve smart elderly policies and laws to create a favourable legal environment for the development of smart elderly services. In turn, policies and laws should include support for the relevant sectors, quality control of elderly care services and information security protection, and strengthen the dissemination and explanation of policies and laws on healthy ageing, and raise awareness of these policies among enterprises, research institutes and the public.

4.2 Handling the relationship between executive agencies to enhance the efficiency of smart elderly services

First, in the face of the development of the smart elderly service market, the cost of intelligent technology and elderly services is relatively high, so it is necessary to pay attention to the relationship and interaction between the government as well as other executive agencies, and to fully communicate effectively with the elderly groups, to further understand the actual needs of the elderly, and to promote the expansion of the scope of the use of smart elderly technology^[7]. Strengthening the relationship between the executive agencies, all departments to ensure the living standards of the elderly as the premise, rely on public resources for elderly care services, collect the effective living needs of elderly groups, and further develop smart elderly care services^[8]. And in the face of insufficient financial support from the elderly for the smart elderly service platform, the government should set up a special fund to increase financial investment, through tax breaks, tax incentives and other measures. The government has increased the financial investment in the intelligent healthy ageing platform, improved the system of the intelligent ageing service platform and increased the facilities related to intelligent healthy ageing, given financial support to organizations in the purchase of equipment, and improved the price standard of the facilities of the institutions for the elderly and dealt with the relationship between the implementing agencies to improve the efficiency of the work of the intelligent ageing service.

Secondly, for the level of healthcare institutions, healthcare institutions should provide healthcare workers with low academic qualifications with some professional training opportunities on smart

elderly services, so as to improve the professional competence of healthcare workers and enrich their knowledge base. And medical institutions should complete intelligent daily health information statistics, for the diversified elderly groups, using professional knowledge, better and comprehensively establish targeted electronic health records, through the intelligent elderly care system to match to the appropriate health care services, to improve the efficiency of medical institutions. In addition, medical institutions should increase the promotion of medical equipment to promote the diversification of intelligent elderly services, which should not be limited to simple devices such as smart bracelets, but also need to provide high-grade equipment in terms of monitoring and reminding, life assistance and voice control. To deal with the relationship between the medical institutions to be with the supplier, the needs of the elderly will be transmitted to the supplier, to accelerate only the innovation of the equipment, to reduce the difficulty of the operation of the equipment and operation steps, to comply with the lifestyle of the elderly, and to facilitate their daily health care^[9].

Thirdly, faced with the problem that some intelligent pension enterprises in Heilongjiang Province are in a state of continuous loss for a long time, and the profitability of pension institutions in the long-term competition situation is not optimistic, Heilongjiang pension institutions should improve the service quality of institutions, meet the needs of the elderly groups, and rely on the physical conditions and living habits of the elderly. Targeted smart health services for the elderly. In addition, while ensuring the quality of life of the elderly, the intelligent information service network is combined with the elderly institutions to improve the quality and efficiency of the service staff, but also to strengthen the quality and level of service workers.

4.3 Enhancing the motivation of target groups and strengthening the professional workforce

Firstly, government departments should increase financial support for smart elderly care platforms and establish an even smarter elderly care service platform than before. For special elderly people, including mobility-impaired elderly people, demented elderly people and other elderly groups, they can be given smart bracelets to wear and remote monitoring can be installed to observe the elderly's situation at all times, and to carry out an integrated system of detecting, reminding and alarming the elderly. And the staff of the smart elderly service platform need to improve their professional ability and enhance their knowledge reserve ability, give the staff from time to time business ability training, and carry out some smart elderly industry lectures, but also can give the staff the opportunity to practice, improve the quality of professional training, and build a high-level personnel team.

Secondly, high-quality talents are the key elements to promote the development of the wisdom of the elderly model, and is related to the future development of the wisdom of the elderly industry in Heilongjiang Province, so it is necessary to rely on the government, enterprises and colleges and universities should work together to build a high-level talent team from various aspects. To enable healthcare professionals to develop their areas of expertise through professional and applied training in smart aged care operations and management, smart aged care product development and commercialization, medical treatment, rehabilitation and aged care product development, ensuring that healthcare workers have access to skilled technologies, products, innovations and strategies based on the actual care needs of older people, Pay more attention to practical training, the implementation of the elderly smart care practice training program^[10].

Thirdly, since most of the elderly groups do not have a comprehensive understanding of elderly services, the government should promote elderly services on the ground, and it is also necessary to guide the media and enterprises and other staff, to provide them with training in intelligent old age services, and to increase a variety of supply of old age methods, so as to further enrich the channels through which the elderly can obtain information on AI community-based elderly care services, and it is necessary to actively publicise intelligent old age methods through a variety of media, so as to help the elderly to understand and accept intelligent old age.

4.4 Optimizing the environment for policy implementation and increasing government funding

First, there are serious geographical inequalities in the care of the elderly. In economically disadvantaged areas, where there is not enough financial support, the elderly do not have access to quality intelligent elderly care services. Therefore, the government should implement a policy of territorial ageing of the elderly, which requires adequate financial support and various forms of funding. To this end, the government should set up special funds for communities in different regions, increase financial investment, and encourage community aged-care organizations and institutions to invest in

community aged-care through measures such as tax exemptions and tax concessions, and community aged-care organizations and institutions and other social entities should raise awareness of capital investment, enhance relevant professional capabilities, and promote intelligent aged-care services.

Secondly, as China has better research results in a number of areas, such as the Internet of Things, big data platforms and artificial intelligence, in order to combine smart ageing with the exploration of new technologies, the government will need to increase its financial support for smart ageing. Intelligent aging in Heilongjiang Province should focus on the system of intelligent management problems in old age, to meet the needs of intelligent aging, increase the capital investment, and the allocation of resources for intelligent aging should be under the jurisdiction and affiliation of the key cities. Firstly, a pension system based on web-based smart management tools should be implemented to digitize all organizational activities and smart pension management processes; Secondly, chronic disease management systems can be installed in families, communities and institutions for the elderly, etc, so that data on various health problems of the elderly can be collected and incorporated into the chronic disease management system, and scientifically standardized chronic disease management services can be provided to the elderly in accordance with specific requirements, so as to safeguard the quality of life of the elderly.

5. Conclusion

In the face of the global wave of ageing, it is particularly important to make use of modern information technology to integrate resources and rationalize elderly services. In a country with a large and increasingly aging population, research and development of intelligent models of aging are also critical to society. However, the development of this field still faces many challenges, therefore, the use of some emerging technologies, such as the Internet, the Internet of things, cloud computing, etc., to establish an information service platform for elderly care, so as to transform elderly care services toward intelligent elderly care, further establish a comprehensive elderly care service model, and achieve innovation in all aspects of elderly care services. Thus, it solves the past problems of elderly service, improves the living standard of the elderly group, enhances the happiness of the elderly, and promotes the intelligent elderly service in Heilongjiang Province.

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