
Technology Enabled Elderly Power Resource Development - Based on International Experience Perspective

Zhang Jieyu, Wen Yating

School of Public Administration, Hohai University, Nanjing, China

Email address:

1152018794@qq.com (Zhang Jieyu), 1316765526@qq.com (Wen Yating)

To cite this article:

Zhang Jieyu, Wen Yating. Technology Enabled Elderly Power Resource Development - Based on International Experience Perspective.

Journal of Human Resource Management. Vol. 11, No. 1, 2023, pp. 23-34. doi: 10.11648/j.jhrm.20231101.14

Received: February 20, 2023; **Accepted:** March 6, 2023; **Published:** March 16, 2023

Abstract: With the advent of China's big data era and the deepening of the aging of the population, the problem of idle human resources for the elderly in China is prominent, and the research bottleneck of the development of elderly human resources needs to be broken. At present, China's elderly human resources development strategy is still stuck in the traditional program, and there is a gap in the development of elderly human resources empowered by science and technology. This paper aims to place the development of elderly human resources in the context of the great development of science and technology, learn from the excellent experience of foreign countries through the existing practice of elderly human resources development in developed countries, combine China's national conditions, and use science and technology to empower the development of elderly human resources to achieve the active social participation of the elderly group. Based on the theory of active aging and empowerment, this paper uses qualitative analysis, induction and comparative analysis to explore the current development of human resources empowered by science and technology in China. Through the study of the current social concepts, policies and regulations in the development of elderly human resources in China, this paper puts forward countermeasures and suggestions for the effective development of elderly human resources in China based on international experience.

Keywords: Elderly Power Resource Development, Technology Empowerment, Active Aging

1. Presentation of the Problem

The 2022 Report of the State Council on the Progress of Strengthening and Advancing the Work on Aging shows that by the end of 2021, the national population of elderly people aged 60 and above reached 267 million, and the population of elderly people aged 65 and above reached more than 200 million, with the elderly population accounting for a large proportion of the total population. With the progress of China's economic and social development, the aging of the population is deepening, and the situation of population aging in China is serious. [1] At the same time, the National Bureau of Statistics published the China Statistical Yearbook 2021, which shows that the natural population growth rate in China has dropped significantly in the past decade. [2] Under the combined effect of accelerated population aging and continuous reduction of fertility rate, the decreasing scale of working-age population will become a major obstacle to China's sustainable and healthy economic development. As the basic national condition of China for quite a long period of

time, population aging has challenges as well as opportunities. With the improvement of people's living standards, the average life expectancy of the elderly is increasing, which provides the basic premise for promoting the re-employment of the elderly. In this context, how to actively develop and utilize the power resources of the elderly and encourage, support and guide the re-employment of the elderly is a major issue that needs to be studied urgently.

On the other hand, with the continuous development of science and technology in China, the digital economy has made world-renowned achievements, and its leading and supporting role in economic and social development has become increasingly prominent, and has a great impact on people's lives. Technology is a double-edged sword, in the convenience of people's lives at the same time, but also to the silver-haired people have brought a lot of trouble. With the news of "elderly people without health code to take the subway blocked" "daily shopping by cash rejection" [3] and other frequent outbreaks, the elderly gradually become "digital poverty", the digital divide of the elderly The plight of

the elderly is becoming more and more obvious. In bridging the digital divide of the elderly, China has made active exploration and various attempts, but it is not enough to rely on the practice of bridging the digital divide of the elderly. In 2022, at the "China Science and Technology Think Tank Forum" of the 24th Annual Conference of the Chinese Association for Science and Technology (CAST), the CAST Strategic Research Institute released the "Research Report on the Development of China's Science and Technology Human Resources (2020)", stating that "China maintains the advantage of the world's largest science and technology human resources". Xi Jinping, the general secretary of the twentieth report also stressed that "we must adhere to science and technology is the first productive force" "talent is the first resource" [4], "in-depth implementation of the strategy of science and education, the strategy of strengthening the country, innovation-driven development strategy ". Some of China's science and technology development is at the forefront of the world, scientific and technological innovation has achieved outstanding results, science and technology has unknowingly penetrated into all aspects of our lives, quietly changing our lives. Coupled with the epidemic era, technology living, life intelligent features continue to highlight. However, if we look at the current academic circles in China, the research on the combination of the elderly and science and technology mostly appears in the fields of "digital divide" and "technology fault", but the combination of science and technology and the elderly's power resources. However, there is a gap in the literature on how to use technology to promote the development of elderly people's resources. In the background of digital era, how to use science and technology to help elderly people's power resource development, effectively use the results of science and technology development to promote the social participation of elderly people, solve the current social exclusion problem of elderly people caused by the technology gap, and actively use the results of science and technology development to promote elderly people's power resource development to achieve a good situation of active social participation of elderly people, this is a problem we should deeply consider at present.

In the report of the 20th National Congress, General Secretary Xi Jinping emphasized "implementing a national strategy to actively cope with the aging of the population", which shows that it has become a general trend to promote the development of the power resources of the elderly and realize "the possibility of the elderly". China is an aging country, with a large elderly population, a large number of idle resources for the elderly, traditional thinking and the stereotypical image of society as a whole towards the elderly groups, etc., resulting in a large number of physically fit, knowledgeable and experienced elderly people being forced to "stay at home" in order to "spend their old age peacefully". The inadequate development and utilization of the power resources of the elderly in China is in stark contrast to the high priority and effective utilization of the power resources of the elderly by the whole society in developed countries. Although China's current awareness of elderly power resources development

has increased, the influence of various factors such as insufficient technological empowerment, social ideological solidification and long-term policy vacancies have made the development and utilization of elderly power resources in China seriously inadequate, especially in terms of technology, the low degree of technology-enabled elderly power resources development in China, the existence of a digital divide among elderly groups, gaps in elderly employment information platforms, elderly information Poverty and other urgent problems need to be solved. From an international perspective, developed countries such as Japan, South Korea, Europe and the United States have entered the age of aging earlier than China. Among them, Japan is the first country to introduce laws related to the employment of the elderly, combining technology and legal means to smooth the road to re-employment of the elderly and effectively protect the right of the retired elderly to re-employment. Germany is the first country to implement a flexible retirement system, and they cleverly use technology to let the elderly freely choose whether to retire or continue working through a big data platform. As to how to cope with aging, some practices of these countries that have entered into aging earlier may have implications for China's elderly power capital development. As an open and inclusive country in the world, we can actively learn from the excellent experiences of other countries, combine with our own national conditions, and explore the road of elderly power resource development with Chinese characteristics by empowering science and technology to the elderly power resource development system, so as to promote the practical process of elderly power resource development in China.

The earliest research on elderly resources development in China's academia can be traced back to the 1990s, which is a relatively early start and rich literature. Firstly, the research on the development of elderly people's resources in the context of China's overall population aging, analyzing the background of the phenomenon, the reasons for it and putting forward relevant opinions; secondly, the research on the development of local elderly people's resources, analyzing the relevant measures taken by the local government to promote the development of elderly people's resources and the effect of implementation; thirdly, the research on the development of elderly people's resources from their own perspective. Third, from the perspective of the value needs of the elderly themselves, we will explore the attitudes and roles of the elderly groups toward the development of the elderly power resources; fourth, we will look at the world and explore the long-term practices of some developed countries that have entered the aging society first to develop the elderly power resources, and draw inspiration from the experience to the development of the elderly power resources in China. For example, Xie Lili and Han Wenting (2022) mentioned that Japan has perfect policies to promote the employment of the elderly, and the Japanese government has made efforts to build a policy system to promote the employment of the elderly, [5] which mainly involves three aspects. The Japanese government has made efforts to build a policy system to

promote the employment of the elderly, which mainly involves three aspects from the perspective of content: willingness stimulation, rights protection and capacity support. Xie Qi (2016) pointed out that Japanese human resources development initiatives mainly include: legislation first, the establishment of a special government agency to provide assistance for the employment of the elderly, raising the statutory retirement age and encouraging the re-employment of the elderly. [6] Xiong Ying (2019) and several other scholars pointed out in their articles that Japan's elderly human resources development has systematic and comprehensive characteristics in the regulatory policy system, [7] which focuses on the basic needs of the elderly in medical services, old-age security, and living environment, and also puts forward targeted, feasible, and operational policy measures for employment discrimination, rights and interests protection and other problems that elderly human resources development may encounter. It creates a sound and complete social environment for the elderly to be able to give full play to their remaining energy and contribute to society. Fu Lei and Wu Sixiao (2022), [8] two scholars, suggested that Japanese human resource development has, among other characteristics, actively spreading the concept of aging, spreading quickly, with many initiatives and three-dimensional policies. Two scholars, Lei Wang and Jing Hao (2020), [9] through analyzing the operation and effectiveness of national and local elderly talent centers in Japan, showed that Japan's elderly human resource development has achieved a balance of social and economic benefits to a certain extent. Japan has a profound social background for focusing on the development of human resources for the elderly. Against the backdrop of the increasing aging of the young and the old, Japan's elderly dependency ratio has risen sharply and the burden of pension expenses has increased, making it unsustainable. For this reason, on the one hand, the Japanese government has repeatedly postponed the retirement age to defer pension expenditures; on the other hand, Japanese society has increased its efforts to develop the power resources of the elderly in order to increase the employment rate of the elderly and make up for the labor shortage. Wangqiao (2019) [10] also illustrates that, in the face of the increasingly serious problem of under-ageing and aging in Japan, the Japanese government and business sector have continuously innovated and launched many practices of elderly power resource development from the perspectives of legislation, policy, and management, which have played an active role.

In order to better learn from the experience of foreign countries in elderly resources development, we will analyze the literature of elderly resources development related to science and technology. Since foreign countries have entered into aging earlier and the degree of aging is more serious, so the early scholars mainly focus on "solving the problem of labor shortage in their countries", but with the deepening of aging, the development of power resources for the elderly is imperative. In recent years, the level of science and technology has been improving, and the developed countries in the West have generally entered the digital era, so it is a

trend to use science and technology to empower the development of elderly people's resources. The research of foreign scholars has put forward a lot of excellent experiences in terms of whether to recognize the value of elderly power resources development, or to study the elderly power resources development from the perspective of the development object, or the measures to develop the elderly power resources, but the shortcomings are that most of the research problems stay in the traditional perspective, and the solution measures also stay in the original viewpoint without further innovation. There is a gap in the literature related to resources.

Based on the current research results, this article puts the development and utilization of the power resources of the elderly in the general environment of active aging, based on China's current scientific and technological development achievements and scientific and technological innovation ability, focuses on the current reality of the development and utilization of the power resources of the elderly in China, combines the excellent experience of foreign countries in the effective development of the power resources of the elderly, breaks the current stagnation of the development and utilization of the power resources of the elderly empowered by science and technology, and explores a way to develop the power resources of the elderly empowered by science and technology. The aim is to break the stagnation of the current situation of technology-enabled elderly power resources development and explore a road of technology-enabled elderly power resources development.

2. Explanation of Concepts

2.1. Human Resources and Human Resources of the Elderly

David Ullrich, the pioneer of human resource management, first introduced the concept of "human resources". Peter Drucker, the father of modern management, first introduced the term "human resources" with modern meaning in his book "The Practice of Management" published in 1954, which is the concept of human resources we often use now. According to Drucker, the only difference between human resources and other resources is "people", which is a special resource. In a broad sense, human resource is the sum of people of working age, under working age and over working age with working ability in a country or region. In a narrow sense, human resources are the education, ability, skills, experience, and physical strength that people in an organization have that can be used by the company and contribute to value creation within a certain period of time.

By comparing the evolution of China's elderly human resources policy, we can better understand the changes of the concept of human resources for the elderly in China. In short, anyone who has the will to work and the ability to work can be considered a human resource. The human resources of the elderly are mainly based on the human resources with an age limit. At present, domestic scholars have rich definitions of the concept of human resources for the elderly, but there is still

some controversy about the age limit and specific content of human resources for the elderly. Among them, Tian Shuqin and other scholars have put forward the most representative view, that is, "elderly human resources are the sum of physical and mental energy of the elderly aged 60 and above who have certain labor ability and willingness to work, and can be used by organizations to engage in production and other work,

creating value to promote economic and social development". [12] The human resources described in Drucker's article are not defined by age, but by the willingness to work and the ability to work. Therefore, it is clear that as long as they have the will to work and the ability to work, the elderly can still be part of the human resources of society for redevelopment and reuse.

Table 1. Comparison of the evolution of China's elderly human resource policies [11].

Evolutionary Stage	1949—1980	1981—2006	2006—2019	2019-present
Policy Features	Targeting the elderly for protection	Encourage the "capable" among the elderly to play their roles	Seniors as human resources	Tapping the Longevity Dividend
Paradigm Change	Passive response paradigm		Proactive Paradigm	
Concept Logic	"Settling down": 1. maintaining the stability of the socialist regime is the preferred policy objective of policy makers. 2. the elderly are to some extent excluded from the process of social development due to their difficulty in contributing to economic growth, with a "negative ageing" dimension. 3. 3. the policy on aging does not yet address the need to serve the re-employment and social participation of the elderly		"Doing Something": 1. start exploring the "second demographic dividend" and shift the perspective of tapping the demographic dividend from quantity to quality. 2. 2. Put the people-oriented and active aging as the guiding ideology, emphasizing the equality, subjectivity and initiative of senior citizens	
Organizational Structure		1. Power arrangement: the party and government attach great importance to it, and social participation channels are more standardized and legalized 2. Institutional construction: simplify and improve the institutions related to the elderly, and further clarify the institutional settings and division of functions 3. Participation of social forces: multi-party cooperation 4. 4. Policy feedback: policy consistency, reasonableness and durability are stronger		
Interest Groups		1. Policy maker: Government 2. Policy implementers: enterprises, voluntary organizations, etc. 3. 3. Target group: the elderly		

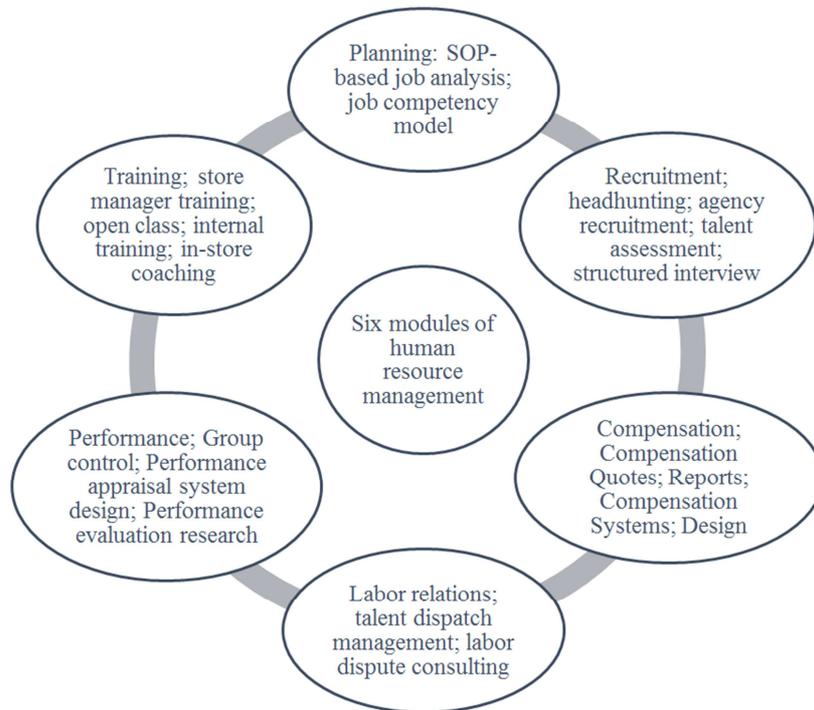


Figure 1. Six modules of HRM.

2.2. Technology Empowerment

Technology is science and technology, empowerment is to give the ability or energy. Science and technology

empowerment, that is, the use of science and technology, to give someone something or something to a certain ability or energy, to promote its continuous development. The concept of empowerment originally came from the empowerment theory in the field of management, whose main idea was to

study the impact of empowering and empowering behaviors on employees in corporate governance, with the ultimate goal of improving the efficiency and quality of work of employees. Nowadays, the term technology empowerment has been applied from the economic field to the senior care field, and from the young group to the old group. With the emergence of the "Internet + senior care" model, the field of technology-enabled smart senior care has shown a thriving scene. It can be seen that technology empowerment and the elderly group are not two contrary words. Technology empowerment can be applied not only to the field of senior care which guarantees the life of the elderly, but also to the field of elderly power resources which develops the elderly labor force. Technology-enabled elderly labor resource development can be based on the development path of "Internet+Aging", using information technology products such as Internet of Things, cloud computing, big data and intelligent hardware to provide efficient and convenient services such as supply and demand matching, quality evaluation, remote monitoring and data analysis for elderly employment groups, forming a smart system with rapid online response, benign offline interaction and full trace supervision. The intelligent mode of elderly people's resources development with rapid online response, benign offline interaction and full trace supervision.

3. Theoretical Support

3.1. Positive Aging

In 1997, the concept of "active aging" first appeared in the Denver Conference of seven Western countries. After many years of discussion and demonstration by scholars, the United Nations held the Second World Assembly on Aging in 2002, after which the World Health Organization officially published the paper "Positive Aging: A Policy Framework". Since then, the theory of active aging has gradually become a new theory, a new policy and a new development strategy to deal with the issue of population aging in the 21st century. The specific connotation of active aging mainly refers to the process of maximizing the effect of health, participation and security opportunities in order to improve the quality of life when people reach old age. [13] Active aging can be reflected as the harmonization of three aspects: maintaining physical health, actively participating in life and maintaining good cognition. [14].

Firstly, in terms of health, with the development and progress of science and technology, the level of medical care in China has increased dramatically, the average life expectancy in China has continued to increase, and the health of the elderly has been better protected, which provides the most basic preconditions for social participation activities of the elderly. Secondly, in terms of participation, active aging overturns the traditional view that the elderly are a heavy burden to families and society, and points out that although the elderly are lacking in physical labor due to age restrictions, the other roles of the elderly cannot be denied, and the elderly can

achieve continuous participation in economic, political, cultural and social public affairs after retirement, so as to achieve "active aging". The elderly can also participate in economic, political, cultural and social public affairs after retirement, so as to achieve "active aging". Finally, in terms of protection, active aging believes that the whole society should regard the need to gain respect and realize self-worth as the basic rights of the elderly, and actively create a good atmosphere of respecting the elderly and facing them squarely, so as to guarantee that the right of the elderly to realize self-worth can be fully exercised. Older people should also face up to their development potential, maintain a good attitude and actively participate in society. With the continuous development of social technology and the improvement and innovation of Internet technology, the contribution of the elderly to society can exist in many forms. When the elderly participate in society in a healthy and active way, they are still the creators of social wealth and contributors to social development, and are still a valuable wealth of human and even human resources.

3.2. Empowerment and Empowerment

Foreign scholar La Porte believes that empowerment means that individuals can take their lives into their own hands as much as possible. The Dictionary of Social Work in the United States also explains empowerment as "a series of ongoing behaviors or processes that help individuals, families, groups, and other group members improve their conditions by improving their ability to interact with others and to participate in social, political, and economic activities." The empowerment and empowerment theory can also be invoked in the field of elderly people's power resource development to consider how to combine the external factor of the general social environment with the internal factor of the elderly themselves to explore a sustainable and healthy development path of elderly people's power resource development. Empowerment theory includes two basic elements, namely "empowerment" and "empowerment". [15] The two are not unrelated to each other, "empowerment" is the basis of "empowerment" and "empowerment" is the requirement of "empowerment". Empowerment is the basis for empowerment, and empowerment is the requirement for empowerment. Empowerment means that the state gives the elderly equal rights to education, science and technology, and employment through establishing sound policies and regulations, improving operation and management mechanisms, and creating an optimal environment for social activities. "Empowerment" is to transform the stereotype of the elderly as a socially disadvantaged group and a social burden on the basis of the basic rights of the elderly being guaranteed, and to treat the elderly as social individuals with development potential on an equal footing. Older people can integrate themselves into modern society by taking the initiative to receive education, actively learning technological products, and actively participating in social activities, so that they can take their lives into their own hands as much as possible. As a result, the self-efficacy of the elderly will continue to increase,

their self-recognition will continue to improve, their self-worth will continue to be realized, and their social value will continue to be highlighted. The elderly as an organic unity of empowerment and empowerment. As citizens of the country, the state should actively take a series of measures to protect the basic rights of the elderly; as individuals in society, the elderly should actively respond to the national call for "active aging", recognize the ability and potential of self-development, and actively integrate into society. Thus, it is necessary to combine empowerment and empowerment in the development of human resources of the elderly, not only to support the re-employment of the elderly in terms of policy and society, but also to educate the elderly and awaken their awareness of social re-engagement.

4. Technology Roadmap

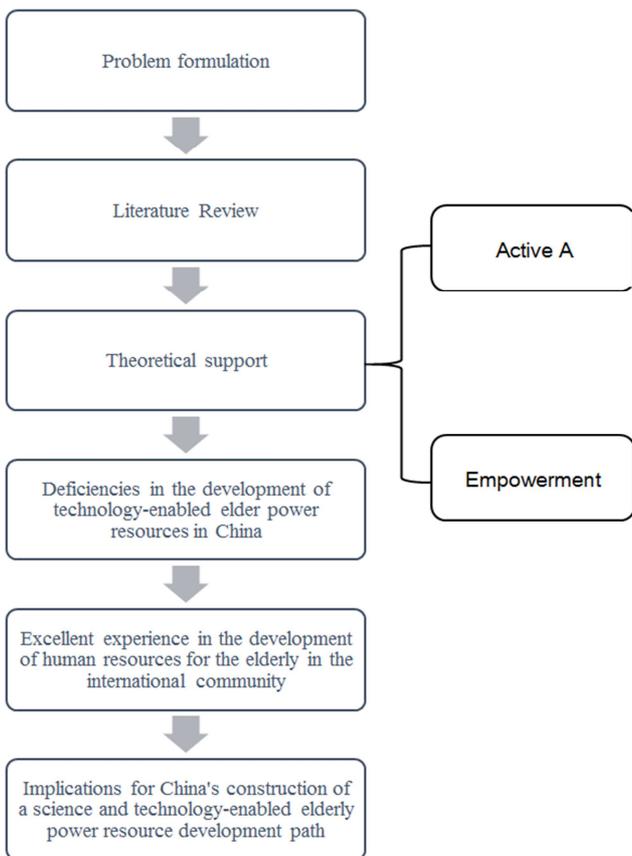


Figure 2. Technological roadmap of human resources development for the elderly enabled by science and technology.

5. China's Current Problematic Dilemma in Aging Development

Health, participation and security are the three pillars to actively deal with the aging of population. As technology continues to develop, medical technology continues to improve, and life expectancy continues to increase, the health of the elderly is better protected, but there are still certain dilemmas in both participation and protection.

5.1. Technology Empowerment Is Difficult to Overcome, and the Digital Divide Needs to Be Bridged

With the deepening of aging in China and the continuous development of science and technology, the problem of digital integration of the elderly is gradually highlighted, and in front of the rapidly changing technological development, the elderly are more and more "overwhelmed". With the widespread use of digital technology, people all over the world are living in a state of immediacy, and the issue of Internet access for the elderly has become the focus of attention. Today, the "digital divide" is particularly evident in this generation of seniors. The digital divide represents the various inequalities in the application of information and communication technologies by social groups, which can be generally divided into "access divide", "use divide" and "knowledge divide" from the perspective of digital technology utilization. ". The Internet era is the era of human-computer interaction, along with the growth of age, in terms of physical, multi-sensory aging of the elderly in the process of access to the Internet in the "network difficulties". At the same time, the memory of the elderly is declining and their thinking is lagging behind, which makes it difficult for the elderly to learn the complicated and fast updating network technology. In terms of psychology, according to the survey, the elderly often suffer from double psychological burden due to the barrier of entering the network and the act of asking for help. In terms of information security, a large number of fraud traps and rumor whirlpools can bring psychological panic to the elderly accessing the Internet, making them less active in accessing the Internet and further expanding the problem of digital divide among the elderly. In the post-epidemic era, from "Shanghai epidemic elderly can't use WeChat to pay for their purchases" to "elderly in their 70s need health code to take the bus because they can't use If we can't bridge the digital divide of the elderly with the power of science and technology, it will be more difficult to develop resources for the elderly.

5.2. The Employment Path Is Single, and the Information Platform Needs to Be Opened up

With the rise of a new round of technological revolution, the rapid development of Internet technology and its applications, human society is rapidly entering the digital era of interconnection, digital teaching, digital office, digital medical, digital payment and other intelligent technologies are widely used in all areas of social life. At present, the re-employment of the elderly is relatively single, while the employment platform for the elderly is blank, and the employment of the elderly is still stuck in the traditional way of applying for jobs. Today, China's elderly re-employment is generally odd jobs and re-employment type, employment type is small and there are certain problems: the first odd jobs, need the elderly have abundant physical strength; and for re-employment type, because these elderly have a skill, many are in the relevant position for many years, stick to the end, so they are more inclined to some new attempts after retirement. Technology can help solve this problem. On the

one hand, technology has led to the development of many new occupations, and on the other hand, it also provides many jobs for the elderly that are less physically demanding and can be done without leaving home. In addition, the labor market has a certain exclusion for the elderly to enter. At present, the recruitment target of China's job market is mainly for young people, and most enterprises directly ignore the elderly group when providing jobs, and do not have certain job design for the elderly. As we all know, for a retired elderly, whether it is low or high age, its engagement in work is no longer universal, but should be targeted. In terms of employment information platform, at present, there is no big data information platform specifically for the elderly in China, and the elderly re-employment group cannot find a personalized and precise job through the exclusive information recruitment APP for the elderly, which has blocked the re-employment channel for the elderly to a certain extent, and also frustrated the enthusiasm of the elderly re-employment to some extent. It can be seen that China's current elderly re-employment market is in urgent need of technological empowerment and big data to help, the lack of information recruitment platform for the elderly has greatly undermined the determination and confidence of China's elderly resources development.

5.3. Social Concept Dilemma

With the arrival of the digital era, science and technology has been integrated into people's lives and brought great convenience, but also caused a lot of inconvenience to the elderly life. However, the structure of China's Internet users is relatively young, according to statistics, nearly 200 million elderly population has never been in contact with the Internet. The current development of technology is not empowering to the elderly group. More elderly people cannot keep up with the progress of technology and are completely out of touch with the current era. When "aging" meets "digital", people generally think that these two words are irrelevant. In traditional society, when a job involves network technology, people will directly exclude the elderly group. In addition, Chinese traditional society generally believes that the retired elderly should enjoy their twilight years in peace, and often classifies the elderly as a disadvantaged group, believing that the elderly are closed-minded and unable to do their jobs either physically or energetically. It is also because of these problems that it is difficult for some elderly people who are willing to work to achieve re-socialization. The progress of science and technology has not brought about the timely update of people's social concept, and the society's awareness of elderly people's power resources development is relatively weak.

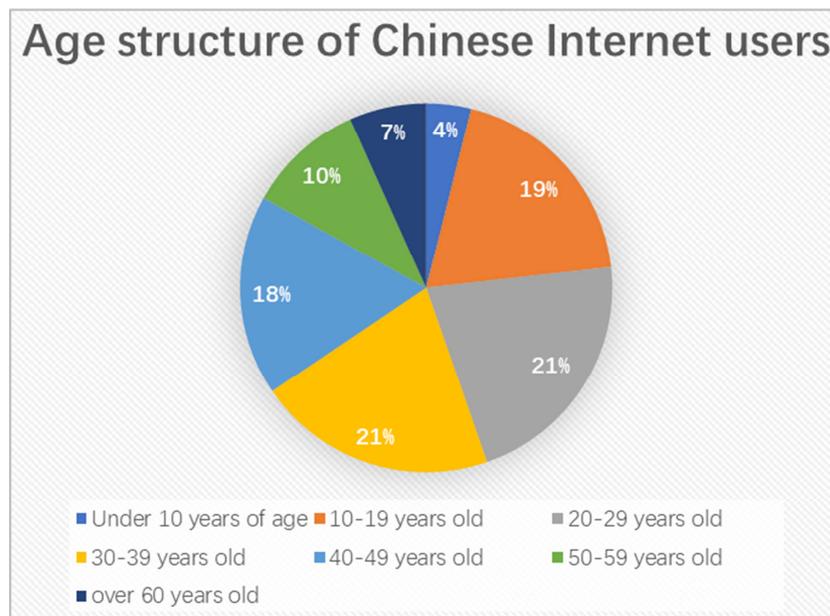


Figure 3. Age structure of Chinese Internet users.

5.4. Policy and Regulation Dilemma

At present, some regions in China have established human resources database with the help of big data platform, but the database of elderly people's resources has been delayed, one of the reasons is that the policies and regulations about the elderly people's resources are not perfect. With the continuous development of China's social security system, the social security system has basically been able to take into account the efficiency and fairness under the socialist market economy,

but in terms of the current degree of perfection of the system, it cannot fully support the protection and investment mechanism of the elderly resources development in China. At the same time, China has not promulgated any policy and law directly related to the re-employment of the elderly, and the lack of laws and regulations related to the development of the elderly's labor resources has led to the lack of legal protection for the re-employment of the elderly. According to the Regulations of the People's Republic of China on the Implementation of the Labor Contract Law, the labor contract

will be terminated when the worker reaches the legal retirement age, so if the retired elderly people are re-employed, they can only form labor relations. It is undoubtedly difficult for the retired elderly to obtain legal protection in case of labor disputes after re-employment. It can be seen that China's current elderly power resources development policy and regulations of the dilemma, the elderly re-employment is not guaranteed, which is undoubtedly a big problem for the elderly.

6. International Perspectives on Elderly Power Resource Development

6.1. From the Experience of the United States

As a science and technology powerhouse, the United States has certain experience in technology-enabled elderly power resource development. First of all, in terms of re-employment of the elderly, the U.S. government has set up an innovation challenge on the power resource development of the elderly, and attracted enterprises to participate through high prizes and post-competition honors, and enterprises have developed a lot of "technology for the elderly" through investment. Bridging the digital divide and eliminating the burden of senior living. The U.S. government and business leaders generally believe that by continuing to develop "age-friendly technology," the new industry will become a new engine for the nation's economic take-off and will bring benefits to the senior industry. For example, in the field of medical equipment, GE and Phillip Technology dominate the development of aging-friendly products, while e-commerce giant Amazon has developed an online pharmacy, PillPack, to meet the needs of seniors to purchase drugs in a timely manner. Technology has long been a driving force in the re-socialization of seniors, as technology has been introduced into social participation. The U.S. Alliance for Technology in Aging has repeatedly proposed that "aging should be viewed from a new perspective" and that "niche technology" can be used to focus on the increasingly long-lived population, which provides us with new ideas for technology-enabled senior strength resource development. In addition to technology, the U.S. has improved a series of laws and regulations in terms of top-level design, gradually raised the retirement age, developed the senior labor market through the intervention of AARP (American Association of Retired Persons), and further developed senior community service employment programs.

6.2. From Japan's Experience

Japan has entered the aging society before China, and has made relevant layout in science and technology innovation to cope with the aging of population earlier. The experience of Japan is worth studying and learning from in terms of science and technology innovation to cope with the development of human resources for the elderly.

First of all, in terms of policy design, Japan has proposed a series of "active aging and ICT solutions" based on science and technology: in 2010, the New Growth Strategy put forward the requirement of "promoting the development of nursing care devices (welfare appliances)"; in June 2013, the Re-emergence Strategy formulated a series of "active aging and ICT solutions". In June 2013, the "5-year plan for the development of robotic nursing care devices" was established in the re-emergence strategy to promote the development and practicalization of nursing care robots; in the New Orange Plan 2018, Japan has specifically proposed to promote the promotion and diffusion of research and development results for the convenience of the elderly. Japan is also giving strong financial support to support the development of robots to solve the problem of aging and population decline with robotics. Secondly, in terms of specific products, with the help of technological innovation, Japan is actively developing products suitable for the elderly and creating an aging-friendly environment from both macro and micro dimensions, which, to a certain extent, solves the digital divide barrier and objective environment unfriendliness problem for the elderly to re-employ. In addition, Japan has accumulated rich experience in the design and construction of smart homes with the full use of modern technology in order to facilitate the elderly to age at home and improve their living environment and quality: from the small design of putting a cane next to a seat to the automatic door recognition system that automatically identifies visitors. In terms of intelligent building design, Japan emphasizes the elderly-oriented approach and uses a variety of sensor devices to automatically adjust doors, windows, air conditioners, lights, etc. Although the above-mentioned contents are intelligent renovations from the perspective of comfortable life for the elderly, the extensive use of these elderly-friendly products also creates a comfortable, convenient and safe working environment for the elderly to a certain extent, and becomes an important external reason for the sustainable work of the elderly. Japan combines the top-level design of policies with the daily life of the elderly, and uses the continuous optimization and renovation and upgrading of technological innovation to create a comfortable and friendly social environment for the elderly, which provides a good basis for the development of elderly power resources.

6.3. From French Experience

As the first country in the world to enter the aging society, France has also made many practices in the area of human resources for the elderly. For those elderly people who are willing to work but cannot adapt to the development of modern technology due to "digital poverty", France adopts an empowering approach by setting up a university for the elderly to provide training for them, namely the "University of the Third Age". At the same time, France is contributing to the French silver economy through digital technology, by involving the elderly in society through the creation of a social system for the elderly and vulnerable groups, with remote assistance solutions and sensors to monitor the physical

condition of the elderly, which are designed to significantly reduce the number of elderly people who are unable to re-enter the workforce for physical reasons. In case of emergency or prediction of imminent vocal danger, the system will send an alert to the service center at the first time, and the service center will send someone to the scene for treatment, which can completely eliminate the concern of employers who are worried about the health of the elderly and do not provide employment positions. France has given full play to the role of digital technology in the elderly population to avoid disconnection between the elderly and society. The practice in the development of traditional elderly human resources, in addition to the training of elderly human resources education mentioned above, is the retirement policy and the development of geriatric academic research, which focuses on promoting the work of the elderly, as well as the exchange of contacts between the elderly, and provides a good atmosphere for the re-employment of the elderly group.

6.4. From the German Experience

Germany, as the country with the fastest aging population in Europe and the first country in the world to implement a long-term care insurance system, has established its own system in terms of technology-enabled elderly power resources. On the one hand, Germany uses high technology to help the physical health of the elderly, on the other hand, Germany is the technology company to intervene in the development of intelligent insurance solutions. Germany plays an important role in the development of a technology-based ageing system that allows older people to age in place. Germany is focusing on the "Smart Health Tele-Health" system, which is very friendly for the elderly who work from home. It has also set up a "multigenerational house" where seniors can read and learn from a wide range of programs, including a downloadable tutorial for an app on their cell phones, a smart move to bridge the digital divide. Germany has also used the AAL system to renovate the apartments of poor elderly people. It is evident that Germany has demonstrated the power of technology in the development of elderly resources everywhere.

6.5. From Singapore's Experience

Singapore is one of the Asian countries with a fast aging population and has more practical experience in promoting the development of human resources for the elderly. First of all, in terms of social culture, Singapore has named the people over 60 years of age as "Happy Agers", which greatly reduces the problem of social discrimination against the elderly in terms of social attitudes. In addition, in terms of institutional design, in order to avoid discrimination against the elderly in the workplace, the Singaporean government amended the regulations in 2017, announcing that from July 1, 2017, the law allowing employers to reduce the salary of employees aged 60 or above was abolished. The provision was introduced by the Singapore government in 1999 when the retirement age was raised from 60 to 62. The removal of this provision, which

allowed employers to reduce the salary of their employees by up to 10% when extending their retirement years, has facilitated the return of older people to the workplace. In addition, an important initiative in the development of Singapore's elderly manpower resources is continuing education. Continuing education in Singapore is mainly provided through the Department of Continuing Education (DCE) in general schools and various training institutions in the Industrial and Vocational Training Board (IVTB) system. In this way, adults, including the elderly, are free to choose various courses of study and training according to the needs of the country's economic and social development and their own interests. After receiving these systematic and specialized education, the elderly people have greatly improved their own quality and their suitability for jobs, which has largely solved the problem of low-level and low-quality types of employment for the elderly. In 2015, the Singaporean government launched a \$3 billion "Action Plan for Successful Aging" to address the problem of elderly people who have difficulty returning to work due to health reasons, with the main aim of providing re-employment opportunities for people aged 65 and below, developing science and technology, and using advanced modern medical technology to extend the. The main objectives are to provide re-employment opportunities for those aged 65 and below, to develop science and technology, and to extend the healthy lifespan of the elderly with modern medical technology.

7. Implications of International Experience for China

7.1. Change Social Concept and Improve Social Recognition

Today, with the rapid development of technology and the Internet, the frequency of Internet access for the elderly has increased, and some elderly people are not as ignorant of the Internet as people stereotypically think. The traditional concept of classifying all elderly people as "digitally poor" and "disadvantaged" has long been outdated. At present, the cultural inheritance mode of "reverse socialization" is gradually increasing in the society. Meanwhile, referring to the concept of positive aging in foreign countries, we can see that most elderly people in foreign societies regard work as a manifestation of personal value and social responsibility, and they believe that work can not only reduce the burden for the society and family, but also keep themselves healthy at all times. They believe that work can not only reduce the burden for society and family, but also maintain their health and social acuity at all times, and the society as a whole has a positive attitude toward the elderly. From this, we can learn from foreign experience that it is essential to break down social stereotypes and reshape the social image of the elderly. On the one hand, we can increase the propaganda and promote the concept of positive aging on online platforms to change the social stereotype of the elderly, and on the other hand, we can empower the elderly through community training and senior citizen universities, so that the elderly themselves can realize

that re-employment not only brings economic value to their families, but also promotes the sense of self-efficacy. At the same time, it is also possible to use the Internet platform to use big data to find examples of re-employment for the elderly and to publicize them in the elderly group in order to achieve the role of role model demonstration.

7.2. Improve Laws and Regulations to Protect Employment Rights and Interests

From the international experience, Japan has been more perfect in the development of human resources for the elderly. The reason why they have become a model of active response to aging and efficient development of human resources for the elderly in the world is from the root of their complete policies and legal measures. Therefore, in terms of institutions and laws, China should accelerate the formulation of laws and regulations specifically for the re-employment of the elderly, and improve the social security system. While recognizing the regulatory role of laws and regulations, it is also necessary to give full play to the underpinning support role of the social security system. On the one hand, we can set up special funds as a guarantee for the re-employment of the elderly, and on the other hand, we can also drive the social responsibility of enterprises to provide a good social atmosphere for the re-socialization of the elderly. To sum up, improving laws and regulations and social security system plays a vital role in the protection of the rights and interests of re-employment of the elderly.

7.3. Integrate into the Age of Technology and Bridge the Digital Divide

To bridge the digital divide among the elderly and build a "bridge to help the elderly", we believe that there are several aspects that can be learned from the following: Firstly, to speed up the aging-appropriate transformation of public services. First, we should speed up the aging-friendly construction of facilities and public services for the elderly, and provide online and offline services for the elderly to choose from. On the one hand, we should facilitate the equal enjoyment of smart technology by the elderly, cross the digital divide and eliminate digital poverty; on the other hand, we should respect the right of the elderly to refuse to learn to use smart technology. Secondly, to realize the "aging" transformation of digital products, launch the App suitable for the elderly, and set up a transition period to retain the traditional path, forming a gradual transformation, not only that, but also the Internet and related applications should be aging and accessibility transformation. According to statistics, although nearly 50% of the applications have responded positively and launched age-appropriate versions, there are still a large number of applications that are difficult for the elderly to use. Finally, we need to stimulate the enthusiasm and enthusiasm of the elderly to learn smart technology. Young people can be encouraged to carry out "reverse socialization" of cultural heritage, and in the face of the "digital dilemma" of the elderly, "cultural feedbacks" can be

achieved through children or youth volunteers, while At the same time, we can set up a university for the elderly by pooling the efforts of various parties in the society, and offer special courses on digital products to increase the motivation of the elderly to learn independently. As the memory of the elderly declines with age, they tend to forget what they have learned, so the society should give enough patience to the elderly, and the children of the family should be patient in guiding their parents to learn the basic functions of smart phones when they carry out "cultural feeding", so that the elderly can learn through experience learning, experience exchange, mutual help and other ways to Through experiential learning, experience exchange and mutual help, the elderly can learn new things, experience new technology and actively integrate into the smart society. Bridging the digital divide among the elderly, building a bridge to help the elderly, and using technology to help the elderly better integrate into the digital age.

7.4. Build a Wisdom System to Bridge the Bridge of Helping the Elderly

With the continuous progress of science and technology in China, technology empowerment is indispensable to realize the development of elderly people's power resources. International experience of re-employment of the elderly shows that brief and flexible employment methods are more in line with the needs of the elderly employment. How to change the spontaneous, scattered and disorderly re-employment of the elderly and transform them into flexible employment methods, technology empowerment is essential. Firstly, China should make full use of the fast-developing Internet information technology, incorporate the construction of "intelligent elderly employment system" into the national economic and social development plan, and develop and utilize such information platform in an organized and planned manner according to the principle of fully developing and reasonably using labor resources and taking into account the physiological characteristics of the elderly themselves. The "Smart Senior Employment System" will be incorporated into the national economic and social development plan. To build a "smart senior employment system", we can give full play to the advantages of the Internet in collecting data and integrating resources, establish a database of senior labor resources covering urban and rural areas, build provincial and municipal websites for senior citizens, provide job-seeking registration, policy consultation and job information for senior citizens who are willing to work, and provide relevant information on senior citizens for employers. We will use big data matching to build a communication bridge between the two. Secondly, we should encourage enterprises to explore flexible time work system and telecommuting system suitable for the elderly, and develop personalized and targeted job search APPs that meet the spiritual and physical needs of the elderly. Based on the data of the old people's jobs before retirement and MBTI occupational personality test and health checkup, we can accurately analyze each old person's tendency of re-employment, establish a network database of

old people's force resources information, realize information management in web format, hold a professional online job market for the old people's force resources in response to the special needs of old people's force resources, realize reasonable allocation of old people's force resources in the social demand, and realize network management and database management for old people's force resources entering the re-employment market. Implement network management and database management. We should understand the overall work status, demand and problems of elderly manpower resources, and finally realize the virtuous development of the cycle of two-way selection of elderly manpower resources supply and market demand. At the same time, it should ensure that most retired workers who have the will to re-employ can find temporary, short-term and capable jobs nearby, and when the elderly do not find suitable positions, they can also establish a transition platform to provide voluntary activities for the elderly within their ability, promote the elderly out of their families, and stimulate the enthusiasm of the elderly for participating in society. Third, it is based on the community, the region as a module to establish a database of elderly people's resources, the community to set up elderly people's job search service points, on the one hand, authorize the community to use the data of the province's elderly labor resource database, to provide job search consulting services for the elderly, on the other hand, the community can carry out the registration of elderly people's job search in the district, unified job search information to the province's elderly labor resource database. At the same time, communities can also integrate the use of community education institutions, vocational education centers, senior universities and other educational resources to regularly organize employment training for the elderly, set different training courses and training contents according to the employment needs of the elderly at different levels, flexibly arrange training time and training forms according to the physical conditions of the elderly and training contents, develop a flexible employment system suitable for the characteristics of the elderly, and use telephone, Network information and other modern means to fully realize technology empowerment of the elderly, open up employment channels for the elderly, and realize the effective development and utilization of domestic elderly force resources.

8. Conclusion

With the continuous development of China's society and the deepening of population aging, the problem of a large number of idle elderly power resources is still more prominent, and the continuous development of Internet information technology, technology empowerment is deeply rooted in people's hearts. In today's society, the idea of "active ageing" is gradually prevailing, but the development of power resources for the elderly is not satisfactory, especially in the development of technology-enabled power resources for the elderly there are a lot of gaps. This paper summarizes the current situation of elderly power resources development in China, draws on

international experience, takes the essence and removes the dross, combines foreign experience with China's actual situation, and proposes countermeasures for technology-enabled elderly power resources, using technology to improve social participation of the elderly and promote the realization of re-employment of the elderly. We believe that in the future, with the continuous development of science and technology and the continuous change of social concept, the external environment of China's elderly power resources development will be more friendly and the internal concept will be more open, and science and technology will help more and more excellent elderly talents to participate in society again through various ways and contribute their own power, which will guide China's elderly power resources development to be healthy and sustainable. The beautiful blueprint of technology-enabled elderly human resources development will finally be realized in China!

References

- [1] Ma Xiaowei. Report of the State Council on the Progress of Strengthening and Advancing the Work on Aging - August 30, 2022 at the Thirty-sixth Session of the Standing Committee of the Thirteenth National People's Congress [J]. Bulletin of the Standing Committee of the National People's Congress of the People's Republic of China, 2022, (05): 758-765.
- [2] 2021 China Statistical Yearbook [J]. Statistical Theory and Practice, 2022, (01): 2.
- [3] Wang Shichuan. Who will help the elderly who are stuck with health codes [J]. Essay Communication, 2020, (24): 58.
- [4] Research report on the development of human resources in science and technology in China [J]. China Science and Technology Information, 2020, (14): 6-8.
- [5] Xie Lili; Han Wenting. Policy reform and inspiration of promoting employment of the elderly in Japan [J]. Population and Economy.
- [6] Xie Qiang. The experience of foreign elderly people's power resources development and its inspiration to China [J]. Journal of Suihua College, 2016, (11): 16-19.
- [7] Xiong Ying; Che Sihan; Yang Yifan. Regulations and policies on the development of elderly manpower resources and inspiration in Japan [J]. China Personnel Science, 2019, (09): 63-74.
- [8] Fu Lei; Wu Sixiao. The experience and inspiration of Japanese elderly manpower resources development [J]. Journal of China Institute of Labor Relations, 2022, 36 (02): 85-94.
- [9] Wang Lei; Hao Jing. The practice and inspiration of elderly power resource development in Japan: the example of elderly talent center [J]. Scientific Research on Aging, 2020, 8 (03): 68-80.
- [10] Wang Qiao. Elderly human resources development: Inspiration from Japanese practice Wellbeing Research, 2019, v. 2, 72-79.
- [11] Yang, Y. N.; Gao, N. Policy search and changes of active elderly power resources development in China [J]. Social Security Research, 2022, (02): 59-69.

- [12] Tian Shuqin, Wang Dongqiang, Song Fanjin, Li Yu. Governance strategies for the development of elderly resources left behind in rural areas in the process of urbanization [J]. Chinese Journal of Gerontology, 2017, 37 (11): 2848-2850.
- [13] Song Quancheng; Cui Ruining. Theoretical response to rapid population aging-from healthy aging to active aging [J]. Shandong Social Science, 2013, (04): 36-41.
- [14] Chen Jihua. Difficulties in the development of "time bank" mutual aid pension model and its response strategies--Based on the theoretical perspective of positive aging [J]. Jiangsu Social Science, 2020, (01): 68-74.
- [15] Wang Mengyun; Zhai Jie. Research on the development of elderly people's power resources in China in the context of empowerment theory [J]. Journal of Hebei University College of Adult Education, 2016, 18 (03): 11-14.

Biography

Zhang Jieyu (2002-), Nanjing, China, Undergraduate student of Labor and Social Security, School of Public Administration, Hohai University.

Wen Yating (2002-), Nanjing, China, Bachelor of Labor and Social Security, School of Public Administration, Hohai University.