

Research on Public Policy Making Mechanism Based on Multidisciplinary Perspectives—Taking Community Wisdom for the Aged as an Example

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Keywords: Multidisciplinary Perspective; Public Policy-Making Mechanism; Community Wisdom for the Aged; Policy Assessment; Interdisciplinary Integration

Abstract: With the aging of the population, community wisdom pension has become an important model to meet the challenge of pension, and its policy formulation is very important. This paper takes the community wisdom pension as the breakthrough point, and deeply studies the public policy-making mechanism based on multi-disciplinary perspective. By comprehensively applying the theories and methods of sociology, economics, management and other disciplines, this paper analyzes the basis and influencing factors of policy making, and constructs a multi-disciplinary policy making mechanism. It is found that different disciplines provide multiple and key elements for policy making, such as the influence of the needs and social structure of the elderly from the perspective of sociology, the consideration of resource allocation and cost-effectiveness from the perspective of economics, and the role of organizational coordination and management mode from the perspective of management. The research shows that the multi-disciplinary policy-making mechanism can effectively improve the scientificity, rationality and effectiveness of the community wisdom pension policy, and provide strong support for improving the relevant policy system.

1. Introduction

With the acceleration of the global population aging process, the problem of providing for the aged has become an important challenge for the social development of all countries [1]. In China, the traditional family pension function is gradually weakening, and there are many limitations in institutional pension. As a new pension model, community wisdom pension came into being, which has attracted wide attention [2]. With the help of information technology, community wisdom pension integrates community resources to provide efficient, convenient and personalized pension services for the elderly, which has become an important way to alleviate the pressure of pension and improve the quality of pension services [3].

In this context, the effective formulation of public policies plays a key role in guiding and supporting the healthy development of community smart pension [4]. However, at present, there are many difficulties in the process of formulating the community smart pension policy. On the one hand, the complexity of the pension problem determines that it is difficult to analyze and solve it comprehensively from a single subject perspective; On the other hand, the integration and application of multidisciplinary knowledge in policy formulation is still in the exploratory stage, and a mature and effective mechanism has not yet been formed [5].

It is of great theoretical and practical significance to study the public policy-making mechanism from a multidisciplinary perspective. Theoretically, it is helpful to break down discipline barriers, enrich the theoretical system of public policy making, and promote the development of interdisciplinary research [6]. In reality, we can comprehensively consider sociology, economics, management and other multidisciplinary factors, improve the scientificity, rationality and effectiveness of policy formulation, better meet the diversified needs of the elderly, and promote the sustainable development of the community smart pension industry [7].

This study takes the community wisdom for the aged as an example, and probes into the public policy-making mechanism from a multidisciplinary perspective. Through the integration of multidisciplinary knowledge, it aims to analyze the basis and influencing factors of policy formulation, build a scientific and reasonable policy formulation mechanism, and provide guidance

for improving the community wisdom pension policy system, thus helping to solve the increasingly serious pension problem and improve the quality of life and happiness of the elderly.

2. A summary of related theories and research

The theory of public policy formulation is rich and diverse. Rational decision-making theory advocates that policy makers should choose the best policy plan through scientific analysis and calculation on the basis of fully grasping information, so as to maximize policy objectives [8]. The theory of gradual decision-making emphasizes that policy making is a process of gradual adjustment and continuous improvement, and policy makers deal with problems through marginal adjustment based on existing policies [9]. The comprehensive scanning decision-making theory attempts to combine rational decision-making with gradual decision-making, determine the policy direction by rational analysis at the macro level, and make specific decisions by gradual method at the micro level [10]. These theories provide theoretical guidance for public policy formulation from different angles, but each has its own limitations in the complex and changeable realistic situation.

Community wisdom pension integrates information technology and pension services, and realizes the intelligence and accuracy of community pension services by using technologies such as Internet of Things, big data and artificial intelligence [11]. Its development conforms to the needs of scientific and technological progress and aging society, aiming at solving the problems of uneven distribution of resources and low service efficiency of traditional aged care services. At present, some progress has been made in community smart pension, but it still needs to be improved in terms of service quality, technology application depth and policy support.

Sociology focuses on the social needs of the elderly, social support network and social integration, and discusses how to promote the social well-being of the elderly through policy formulation [12]. Economic research mainly focuses on the efficiency and cost-benefit analysis of resource allocation, providing economic feasibility basis for policy formulation. Management focuses on organizational management and service process optimization, and studies how to improve the operation and management level of community smart pension services [13]. However, most of the existing studies are carried out from the perspective of a single discipline, and the systematic study of multidisciplinary integration is relatively scarce, and there is a lack of comprehensive and in-depth discussion on the construction of policy-making mechanism. This study will be devoted to filling this gap.

3. Multi-disciplinary analysis of the basis of community wisdom pension policy formulation

The effective formulation of community wisdom pension policy needs to be deeply analyzed from a multidisciplinary perspective, so as to fully understand its formulation basis and lay the foundation for the scientific and rational follow-up policies. The following is an analysis from the perspectives of sociology, economics and management.

3.1. Sociological perspective of the needs of the elderly groups and social structure

From a sociological point of view, the elderly group has complex and diverse needs. In addition to the basic needs of life care and medical care, their needs for social participation, emotional comfort and social identity are equally urgent. With the increase of age, the social circle of the elderly gradually shrinks, which is easy to produce loneliness, and the demand for social activities and emotional exchange platforms in the community is high. In addition, the change of social structure also profoundly affects the pension model [14]. The traditional family pension model has been impacted by factors such as shrinking family size and increasing population mobility. As a supplementary and alternative model, community wisdom pension needs policy guidance to adapt to the new social structure. In this context, policy-making should focus on building a social support network, encouraging community organizations, volunteers and other diverse subjects to participate, and meeting the needs of the elderly in social interaction, spiritual culture and so on.

3.2. Resource allocation and cost-effectiveness from the perspective of economics

The perspective of economics provides an important consideration on resource allocation and cost-effectiveness for the formulation of community smart pension policies. In terms of resource allocation, it includes the allocation of human, material and financial resources in different links of old-age services. Taking capital resources as an example, the government's financial input should be reasonably allocated to the purchase of smart pension equipment, training of service personnel, operating subsidies, etc. (see Table 1). From the perspective of cost-benefit, policy-making needs to ensure that the community smart old-age service can achieve cost control and maximum benefit in the long-term operation. It should not only pay attention to direct economic benefits, such as the benefits brought by service charges, but also pay attention to social benefits, such as improving the quality of life of the elderly and reducing the burden of family care for the elderly. Policies can encourage social capital to participate, optimize resource allocation and improve overall efficiency through subsidies, tax incentives and other means.

Table 1 Proportion Table of Community Smart Pension Fund Resources Allocation

Direction of resource allocation	Recommended allocation ratio (%)
Smart pension equipment purchase	30
Service personnel training	25
Operating subsidy	20
Technology research and development and upgrading	15
Others (publicity, etc.)	10

3.3. Organization, coordination and management mode from the perspective of management science

The perspective of management focuses on the organization, coordination and management mode of community smart pension service. Efficient organization and coordination is the key to ensure the smooth operation of services. Policies need to clarify the responsibilities of all participants, such as government departments responsible for policy formulation and supervision, enterprises providing technology and services, and community organizations undertaking implementation. At the same time, the government should establish an effective communication and cooperation mechanism, break down departmental barriers, and realize resource sharing and cooperation. In the management mode, modern management concepts and methods, such as performance management, should be introduced. By setting clear service quality indicators, service providers should be assessed and encouraged to improve their service level. In addition, risk management can not be ignored. Policies should guide the establishment of risk early warning and response mechanisms, reduce risks caused by technical failures and service disputes, and ensure the stable development of community smart pension services.

4. Multidisciplinary factors influencing the formulation of community wisdom pension policy

The formulation of community wisdom pension policy is influenced by many factors from a multidisciplinary perspective. These factors are intertwined and work together to form and develop policies. The following is a detailed description from three disciplines: sociology, economics and management.

4.1. Policy environment factors from the perspective of different disciplines

From the sociological point of view, the social and cultural environment has a significant impact on the community wisdom pension policy. Cultural traditions and values in different regions will affect the acceptance of wisdom for the elderly. In some areas with strong traditional concepts, the elderly may be more inclined to the traditional way of providing for the elderly and accept new technologies more slowly. Changes in the social and demographic structure, such as the increase in the proportion of the elderly population and the aging of the elderly population, are also important

policy environmental factors. As shown in Table 2, with the increasing proportion of the elderly, the policy should pay more attention to the provision of long-term care, medical rehabilitation and other services.

Table 2 Analysis of the Impact of Changes in the Proportion of the Elderly Population in Different Age Groups on Policies

Age Group	Current Proportion (%)	Projected Proportion After 5 Years (%)	Policy Emphasis	Corresponding Service Demand Focus
60-69 years old	40	35	Encourage participation in community-based smart elderly care activities, such as organizing elderly interest groups and providing policy support for building social platforms	Social and cultural activities
70-79 years old	30	32	Strengthen health management policies, such as arranging regular physical examinations and policies for allocating resources for basic daily care	Health management and basic daily care
80 years old and above	30	33	Focus on long-term care and medical rehabilitation policies to ensure the investment of professional nursing and rehabilitation service resources	Long-term care and medical rehabilitation

Table 3 Comparison of Policy Inclinations for Smart Elderly Care in Regions with Different Economic Development Levels

Region Type	Characteristics of Economic Development Level	Financial Investment Tendency	Policy Incentive Direction	Key Development Areas of Smart Elderly Care Services
Developed Regions	High GDP, abundant fiscal revenue, and strong residents' consumption capacity	Subsidies for the research, development, and purchase of high-tech elderly care equipment, and investment in the construction of high-end elderly care service institutions	Encourage enterprises to carry out personalized and intelligent elderly care service innovations and provide tax incentives	Research, development, and application of smart elderly care equipment; high-end personalized elderly care services
Moderately Developed Regions	Medium GDP level and certain fiscal support capacity	Subsidies for the construction of community-based smart elderly care service centers and financial support for the professional training of service personnel	Support the development of local elderly care service enterprises, promote service quality improvement, and provide project subsidies	Popularization and quality improvement of community-based smart elderly care services; service standardization construction
Underdeveloped Regions	Low GDP and limited fiscal resources	Purchase basic elderly care services as a safety net and provide subsidies for the promotion of simple smart elderly care equipment	Guide social forces to participate in basic elderly care services and provide operation subsidies	Guarantee of basic elderly care services; coverage of simple smart elderly care equipment
Moderately Developed Regions	Medium GDP level and certain fiscal support capacity	Subsidies for the construction of community-based smart elderly care service centers and financial support for the professional training of service personnel	Support the development of local elderly care service enterprises, promote service quality improvement, and provide project subsidies	Popularization and quality improvement of community-based smart elderly care services; service standardization construction

The level of economic development is a factor that cannot be ignored in the formulation of community wisdom pension policy. In economically developed areas, more resources are invested in the smart pension industry, and policies tend to encourage the development of high-end and diversified pension services. In economically underdeveloped areas, the policy may focus more on ensuring the supply of basic old-age services. The macroeconomic situation will also affect the policy direction. For example, when the economy goes down, the government may adjust the financial subsidy policy and optimize the allocation of resources. As shown in Table 3, different regions have different policy priorities.

4.2. Stakeholders concerned by various disciplines and their functions

The stakeholders concerned by sociology include the elderly, their families and community organizations. As the direct service object, the expression of the needs of the elderly is very important for policy making. The family plays an important role in the elderly's decision-making, and the policy should consider how to guide the family to participate in and support the community's wisdom in providing for the elderly. Community organizations are the bridge connecting the government, enterprises and the elderly, and are responsible for the implementation and feedback of specific services, which will affect the landing effect of policies.

From the perspective of economics, enterprises are important stakeholders. Enterprises promote industrial development by providing smart pension products and services. Policies need to balance the economic benefits and social benefits of enterprises, such as encouraging enterprises to innovate and expand the service scale through tax incentives and project subsidies. At the same time, as a capital investment and policy maker, the government's financial decision affects the allocation of smart pension resources.

The stakeholders concerned by management science mainly include government management departments and pension service institutions. The government management department is responsible for policy implementation and supervision, and its management ability and coordination level affect the efficiency of policy implementation. As the direct service provider, the operation and management mode and service quality of the old-age service institutions affect the actual experience of the elderly, and then feed back to the policy adjustment.

4.3. The influence of multidisciplinary knowledge on policy goal setting

Sociological knowledge makes policy objectives pay more attention to the social welfare and social integration of the elderly, such as promoting the participation of the elderly in community activities and enhancing social identity. Economic knowledge guides the policy objectives to focus on the effective allocation of resources and the balance of cost and benefit, and ensures that the policy is economically feasible. The policy goal of management knowledge assistance focuses on improving the organizational efficiency and management level of services, such as optimizing service processes and improving service quality. Multidisciplinary knowledge complements each other to jointly shape a comprehensive and scientific policy goal of community wisdom for the aged.

5. Multi-disciplinary integration of community wisdom pension policy-making mechanism construction

In order to meet the complex practical needs of community wisdom for the aged, it is very important to build a multi-disciplinary policy-making mechanism. This mechanism needs to integrate sociology, economics, management and other multidisciplinary knowledge, from process design, assessment system framework to guarantee mechanism, to promote the scientificity and effectiveness of policy formulation in all directions. See Figure 1 for details:

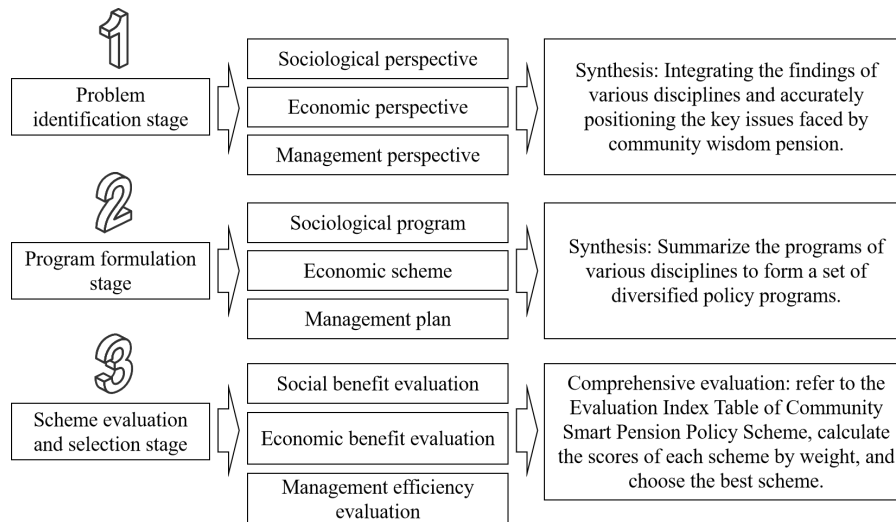


Figure 1 Multi-disciplinary integration of community wisdom pension policy formulation flow chart

5.1. Policy making process design based on multidisciplinary integration

The policy-making process of multidisciplinary integration should break the traditional model of single discipline leading. First of all, in the stage of problem identification, the key problems faced by community wisdom pension are accurately located by integrating sociology's insight into the needs of the elderly, economics' analysis of the current situation of resources and management's examination of the existing service management problems. For example, sociology finds that the needs of the elderly for social interaction are not met, economics reveals the uneven distribution of resources, and management points out that the service process is cumbersome. Then, in the program formulation stage, diversified policy programs are put forward according to the advantages of various disciplines. Sociology provides programs to promote social participation, such as organizing community activities for the elderly; Economics designs the optimal allocation scheme of resources, such as adjusting the direction of financial subsidies; Management makes service process optimization scheme, such as introducing information management system. Then, in the stage of scheme assessment and selection, a comprehensive assessment standard is established. Refer to Table 4, consider each scheme from social benefits, economic benefits, management efficiency and other dimensions. Social benefits pay attention to the satisfaction of the elderly and social integration; Cost-benefit ratio and return on investment of economic benefit assessment; Management efficiency measures the simplification of service process, the smoothness of organization and coordination, etc. Through comprehensive assessment, the best scheme is selected.

Table 4 Assessment Indicators for Community-Based Smart Elderly Care Policy Schemes

Assessment Dimension	Specific Indicators	Weight (%)
Social Benefits	Elderly Satisfaction	30
	Improvement in Social Integration	20
Economic Benefits	Cost-Benefit Ratio	25
	Return on Investment	15
Management Efficiency	Degree of Service Process Simplification	10
	Smoothness of Organizational Coordination	10

5.2. The framework of policy assessment system based on multidisciplinary collaboration

The policy assessment system of multidisciplinary collaboration should cover before, during and after policy implementation. The pre-implementation assessment focuses on the feasibility and expected effect of the policy, and comprehensively analyzes the needs of sociology, the cost-benefit prediction of economics and the organizational feasibility assessment of management to judge whether the policy has the implementation conditions. The assessment in implementation pays

attention to the problems in the process of policy implementation, such as whether the resource allocation is reasonable (from the perspective of economics), whether the service meets the needs of the elderly (from the perspective of sociology) and whether the management is efficient (from the perspective of management). Post-implementation assessment comprehensively considers the long-term impact of the policy, including the realization degree of social benefits, the achievement of economic benefits and the improvement effect of management efficiency, so as to provide a basis for subsequent policy adjustment. The details are shown in Table 5 below:

Table 5 Key Assessment Focuses at Different Implementation Stages of Community-Based Smart Elderly Care Policies from a Multidisciplinary Perspective

Assessment Stage	Sociological Perspective Focus	Economic Perspective Focus	Management Perspective Focus
Pre-implementation Assessment	Evaluate the potential role of the policy in enhancing the social integration and well-being of the elderly based on surveys of their social needs	Predict the implementation costs and potential economic benefits of the policy and assess its economic feasibility	Evaluate the feasibility of the organizational structure and management model required for policy implementation
Mid-implementation Assessment	Observe whether the services meet the social needs of the elderly in terms of social interaction, emotions, etc., and make timely adjustments	Monitor the rationality of resource allocation to ensure the effective use of economic resources	Examine whether the management process is efficient and identify any management issues that hinder policy promotion
Post-implementation Assessment	Measure the extent to which the policy has achieved social benefits such as improving the social status and participation of the elderly	Calculate the long-term economic benefits of the policy, such as the comparison between cost recovery and output benefits	Evaluate the improvement in management efficiency, such as the optimization of service processes and the improvement of organizational coordination

5.3. Guarantee mechanism to promote the application of multidisciplinary knowledge in policy formulation

In order to ensure the effective application of multidisciplinary knowledge in policy making, it is necessary to establish a guarantee mechanism. On the one hand, all departments should strengthen the training of interdisciplinary talents, encourage students of related majors to take multidisciplinary courses, and improve the interdisciplinary literacy of policy makers. On the other hand, all departments can build an interdisciplinary communication platform, organize experts and policy makers in sociology, economics, management and other fields to discuss regularly, and promote knowledge sharing and integration. In addition, the government needs to set up special research funds to support interdisciplinary research projects and provide theoretical support for policy formulation. Through these security mechanisms, we will promote the deep integration of multidisciplinary knowledge into the formulation process of community smart pension policies.

6. Conclusions

Based on the multi-disciplinary perspective, this paper systematically studies the policy-making mechanism of community wisdom pension, and has achieved a series of significant achievements.

From the perspective of policy-making, the sociological perspective reveals the influence of the diverse needs of the elderly and the changes of social structure on the old-age care model, and emphasizes the necessity of building a social support network. The importance of rational allocation of resources and cost-benefit balance is highlighted from the perspective of economics; The perspective of management focuses on organizational coordination and management model optimization. These basic studies provide a comprehensive and in-depth basis for policy formulation. In terms of influencing factors, the policy environment, stakeholders and their functions from different disciplines, as well as the influence of multidisciplinary knowledge on

policy goal setting are intertwined. Policy-making needs to fully consider environmental factors such as social culture and economic development level, balance the demands of various stakeholders, and set scientific and reasonable policy objectives by integrating multidisciplinary knowledge. By constructing a multidisciplinary policy-making mechanism, including integrating the multidisciplinary policy-making process, coordinating the multidisciplinary policy assessment system framework and promoting the application of multidisciplinary knowledge, it is expected to significantly improve the quality of the community wisdom pension policy. This will not only help to meet the growing diversified needs of the elderly, improve the quality of old-age services, but also promote the sustainable development of the community smart old-age industry.

However, there are still some limitations in this study. The policy-making mechanism of multidisciplinary integration may face many challenges in practical application, such as obstacles in interdisciplinary communication and difficulties in data integration. Future research can further explore strategies to deal with these challenges. With the development of science and technology and social changes, the model of community wisdom for the aged is constantly evolving, and the policy-making mechanism needs to be continuously optimized and improved to adapt to the new situation and needs.

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