

Modernization of Public Service Governance in Rural Areas of China

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Abstract: The modernization of public service governance is a crucial component of rural governance in China; it promotes the quality of public services and provides a foundation for improving people's livelihood and revitalizing rural areas. Based on an investigation in 22 Chinese provinces (cities and autonomous regions), the study summarized the historical evolution of the public service governance in rural areas and the relevant institutional changes; analyzed the major challenges faced during the modernization of rural public service governance in China; and proposed strategic objectives, a development roadmap, and key tasks for 2050. Multiple problems persist in the areas of public education, health care, social security, employment training, and public cultural and sports services. Therefore, the key tasks for the future include: (1) building a coordinated infrastructure system between the urban and rural areas, (2) modernizing the governance of rural education, (3) improving a rural cultural and sports infrastructure, (4) optimizing the public health service system, and (5) improving the social security system in rural areas.

Keywords: public service governance; rural modernization; rural governance; co-governance; coordinated development

1 Introduction

With the continuous advancement of urbanization and the gradual implementation of a comprehensive rural reform in China, profound changes have taken place in its rural governance. Under the tide of global governance modernization, revamping the public services in the countryside has become one of the main priorities of the rural administration in China. Developed countries and regions took early initiatives in rural public service governance and achieved remarkable results. The United States has successively promulgated and implemented projects like the Rural Development Mission Area Strategic Plan 1997–2002, Rural Community Assistance Partnership, Federal Health IT Strategic Plan 2015–2020, and A Strategy for American Innovation. It also adopted measures such as offering loans and grants to strengthen the construction of basic rural public services and enhance their digitalization. In 2002, the European Union (EU) put forward a broadband network development plan and set up a broadband capacity office to provide guidance and help the construction of relevant facilities in rural areas. Since 2001, Japan has progressively formulated initiatives such as the e-Japan Strategy, u-Japan Strategy, i-Japan Strategy 2015, and Society 5.0 Strategy to accelerate the construction of a network infrastructure, promote the development of e-government and e-self-government systems, and support the intensive advancement of social public service governance. China attaches great importance to the establishment of rural public services. Since

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2003, a series of policies have been introduced to promote expansion of their capacity. For example, the report of the 19th National Congress of the Communist Party of China (2017) made major arrangements for the revitalization strategy of the countryside, requiring to accelerate the modernization of agriculture and rural areas, including the construction of a contemporary public service governance system. The *Guiding Opinions on Strengthening and Improving Rural Governance* (2019) put forward an over-arching design, deploying the construction of township rural service centers, and advising on the development of compulsory education, medical and health care, social insurance, labor employment, culture and sports, and other basic public services.

Building a perfectly modern service supply system, filling the existing shortcomings, and improving quality of public services are not only the basic requirements for safeguarding and improving people's livelihood, but also one of the important pillars in the rural governance modernization. Scholars have discussed the concept and implications [1,2], action mechanism [3,4], and practical dilemma [5,6] of rural governance modernization, as well as the basic system [7,8], supply-demand relationship [9,10], and governance model [11,12] of rural public services. Overall, there has been more thoughts on the modernization of rural governance in general, but less research on the modernization of rural public service governance; some specific aspects of the rural public services, such as education, medical care, and culture, have been covered by numerous studies. There is little research, however, on the present situation, demand, and development path of all services. Therefore, the governance modernization studied in this paper will focus on five major areas: public education, medical and health care, social security, employment training, and public culture. Grassroots government, rural residents, rural elites, social organizations and enterprise organizations are the main governance participants, and the major rural governance principles include standardization, refinement, informatization, equalization, the rule of law, and inclusiveness. The aim of this study is to suggest ways in which the governance of the rural public services can be innovated. Additionally, it looks at how their supply can be improved by modernizing the organizations, systems, means, and concepts. By combing data about historical changes of rural policies with on-the-spot investigation and questionnaire survey data, this paper analyzes the current situation and needs for modernization of the rural public service governance, and suggests relevant development goals and key tasks, as well as providing basic reference for academic research and management decision-making.

2 Main problems in promoting the modernization of the rural public service governance in China

With the socio-economic development of the rural areas in China and the change of related policies, the following stages can be discerned in the governance of the rural public services: collective supply of rural public services (1949–1977), promotion by grassroots governments (1978–1991), establishment of a public service system (1992–2005), establishment of a public service mechanism (2006–2016), and standardization and equalization of the public services (ongoing since 2017). The governance has gradually changed from a nationwide collective supply with low coverage, low cost, and low efficiency to a governance mode with full coverage, accessibility, and equalization. The governance has gradually shifted from relying heavily on the government to multi-party governance including the government, villagers, and social organizations. The object of governance has expanded from covering basic needs such as education, old-age care, and medical care to higher-level needs such as culture and social security. The means have changed from traditional management to a modern governance mode that integrates people, government, legal system, and technology. The service system has changed from one with different urban and rural standards to a unified, equal, and standardized one. In 2020, our research team conducted a questionnaire survey and field investigation on the governance of rural public services in 22 provinces (cities and autonomous regions) across the country. According to the analysis and calculation of 1160 returned questionnaires, the overall modernization degree was only 50.96%. There were significant differences across regions. For example, in Shanghai this was 2.5 times higher than that in the Tibet Autonomous Region, and in the eastern region (63.05%) higher than that in the central (45.84%) and in the western part of the country (49.42%). The governance focused on five major fields: public education, medical and health care, social security, employment training, and public culture. The problems identified are shown in [Table 1](#).

2.1 Uneven distribution of urban and rural public education resources

At present, there are obvious gaps between the urban and rural areas in China in terms of educational resources such as teachers, teaching facilities, teaching contents and methodologies. First, there is a great disparity in the reserve of teachers: in the investigated areas, the proportion of teachers with bachelor degree or above was lower

by 15.17% in comparison with those in the urban areas; there are 11% full-time teachers in rural primary schools with only high school diploma or less, and the number of rural full-time teachers of English and music is seriously insufficient. Second, teaching facilities in rural areas needs to be improved. The number of books, computers, and sports fields in rural primary schools in are far less than those in cities. Third, the teaching contents and methodologies in countryside areas are generally lagging behind. There is a lack of attention to students' abilities, personality development, and interest expansion, which is not conducive to the all-round development of students' quality. Therefore, it is necessary to further increase the investment in rural primary and secondary school education infrastructure and human resources by attracting high-quality teachers, balance the allocation of compulsory education resources, expand inclusive preschool education resources through multiple channels, and strive to compensate for the lack of quality education, vocational education, and higher education in backward areas. The fifth-generation mobile communication technology (5G) should be integrated with rural education to promote teaching methods such as remote online classrooms and artificial intelligence classrooms, and improve the quality of rural basic public education by sharing high-quality educational resources between rural and urban areas.

Table 1. Main problems existing in the rural public service governance

| Subdivision areas | Existing problems | Questionnaire survey results (%) |
|--|--|----------------------------------|
| Governance of rural public education service | Teachers are lacking, and full-time teachers such as English music ones are seriously insufficient | 60.61 |
| | It lags behind the urban education system | 45.45 |
| | Students have a narrow range of knowledge | 36.36 |
| | Insufficient funds | 33.33 |
| | Lack and backwardness of educational and teaching facilities | 27.27 |
| | Backward teaching methods | 12.12 |
| | No problem | 12.12 |
| Governance of rural public medical service | Medical equipment and other facilities and equipment are outdated | 38.50 |
| | Medical expenses are too high, and it is expensive to see a doctor | 48.10 |
| | Doctors are underqualified | 29.00 |
| | Poor service attitude | 19.00 |
| | It is too far away from home to see a doctor | 19.50 |
| | Drug deficiency | 15.60 |
| | Do not know | 16.10 |
| Governance of rural social security service | Activity centers are lacking for older adults | 55.60 |
| | Pensions are not paid in time | 14.90 |
| | No pension | 16.00 |
| | There are no nursing homes | 27.00 |
| | Pensions are too low to bear large expenses such as medical for serious illness | 55.10 |
| Governance of rural employment and training | There are few job opportunities available | 44.70 |
| | There are few employment and training services | 30.00 |
| | Training is not customized according to target audiences | 39.50 |
| | Poor service attitude | 15.31 |
| | People do not know about this service | 48.20 |
| | People are unwilling to attend the training | 24.30 |
| | Others | 3.10 |
| Governance of rural public cultural service | There are too few services provided | 57.04 |
| | Lack of cultural service places and facilities | 51.93 |
| | Insufficient service personnel | 34.26 |
| | Inconvenient access to services | 30.62 |
| | Others | 2.74 |

2.2 Insufficient supply of rural medical and health care services

The supplied rural medical and health services are not sufficient. There is still a big gap in the allocation of medical resources, quality of rural medical services, and coverage of high-quality services in China between urban

and rural areas, which affects the fairness and efficiency of the medical and health services supply in the countryside. First, the allocation of resources was unbalanced. By 2020, the number of beds in medical and health institutions per thousand people in rural China was 4.56, and the numbers of medical and health technicians, licensed (assistant) doctors, and registered nurses per thousand people were 4.63, 1.82 and 1.8 respectively, all accounting to approximately 50% of the same urban resources per thousand people [13]. Second, the accessibility and technological endowments of the rural medical and health services are relatively low, and it is generally “difficult to see a doctor.” According to the survey data, 48.1% of these services are considered high-priced, 38.5% of the medical devices and other facilities and equipment are outdated, and 29% of doctors have poor medical skills. Third, the ability to access high-quality services through digital means is still insufficiently developed. Survey data show that most of the villagers (81.3%) still choose to register at the hospital site; only 26.6% of them use mobile phone applications or a WeChat official account for appointment registration and 19.7% book through the websites. Only 27.3% of township hospitals implement an online appointment system, and not more than 15.2% carry out telemedicine. Therefore, it is necessary to deepen medical reforms, optimize the allocation of resources, increase medical and health investment in rural areas, expand the distribution of township hospitals, rural clinics, and rural health personnel, and continuously improve the service capacity of countryside institutions. Equally necessary is to strengthen the implementation of digital medical services among rural residents, adopt electronic medical information systems and archives on a larger scale, promote the research and development of cloud and mobile medical applications, and provide basic support for the development of rural telemedicine and the improvement of service accessibility.

2.3 Deficiency in rural social insurance services

At present, there are still some institutional-level deficiencies related to rural social insurance services, in migrant workers’ insurance, villagers’ medical care, and endowment insurance. First, the scope of rural endowment insurance services needs to be expanded. On the backdrop of the transfer of rural surplus labor force to urban areas, the size of rural families in China is shrinking, the proportion of empty-nest families is rising, and that of the aged labor force is gradually expanding. It is extremely urgent to establish a perfect rural endowment insurance system. According to the survey data, 34% of villagers have not yet participated in a basic old-age insurance, and there is still much room for improvement of such an insurance. Second, the level of rural medical insurance is relatively low. There are still villagers who have not participated in a basic medical insurance. Considering the high risk of chronic diseases, such as cardiovascular and cerebrovascular diseases, for the older adults and the fact that some imported medicines and medical devices are not eligible for reimbursement, the phenomenon of “poverty due to illness” or “returning to poverty due to illness” is more prominent in rural areas. Third, there are still institutional-level defects in the social insurance for migrant workers. The industrial injury insurance is seriously insufficient, medical insurance is largely unavailable, and the unemployment insurance is subject to many restrictions. Social security payment requirements are too strict, and migrant employees often change their work industries and places, so it is difficult to transfer personal social security. Therefore, it is necessary to improve the rural residents’ pensions, medical insurance system, and migrant workers’ social insurance system, explore the establishment of differentiated social security collection system and social insurance transfer and continuation policies, and broaden the coverage of rural insurance system. It is also necessary to build a national unified and coordinated social insurance system platform, strengthen the system’s settlement efficiency in different places, provide “one-stop” settlement services and platform support for an integrated social insurance system between urban and rural areas and between regions.

2.4 Lack of rural labor and employment service system

China’s rural labor and employment system has outstanding problems in terms of service quality, training content, and school–enterprise cooperation. First, the service quality of the training institutions needs to be improved as they generally have vague functions, imperfect infrastructure, outdated knowledge structures, and lack financial security and highly-qualified teachers, which restrict an in-depth education of new professional and home farmers. Second, the content of the employment training needs to be innovated. According to the survey data, 30% of the villagers reported that this was insufficiently developed and 39.5% of them stated that it was not targeted, indicating that the training offered could not meet the growing needs of the rural residents. Third, school–enterprise cooperation needs to be further expanded. The rural labor and employment training does not support cooperation with employers such as enterprises, lacks practical operation guidance, and provides limited

employment opportunities. Therefore, it is necessary to aim at addressing the demands of the labor market and make the farmers' vocational training more adequate by expanding its scope, and providing on-demand courses. It is also required to innovate the rural labor and employment service mode, to combine farmers' vocational training with career advice, and cooperate closely with a large number of employers such as those in the manufacturing industry to enhance practical applicability and broaden employment channels.

2.5 Lack of rural cultural and sports services

Although the state has increased its investment in rural public culture and sports in recent years, these areas still face many problems in terms of infrastructure construction, talent team development, service content matching, traditional culture exploration and others. First, too little is being done for the establishment of an appropriate infrastructure. According to the survey data, 51.93% of the villagers believe that there facilities and venues for such purposes, and the utilization rate of the built rural bookstores, cultural activity squares, activity rooms, and other such facilities is less than 50%. Second, there is a general shortage of cultural and sports professionals; for example, in 2019, there were 33 530 rural cultural stations in China, and each rural cultural station had less than 1 professional and technical personnel on average (a single urban cultural museum had 12 professional and technical professionals on average) [14]. Third, there a mismatch between the supply and demand for cultural and sports services. The rural cultural and sports facilities are relatively single, the content offering is not diverse enough, and villagers are not very keen to participate in cultural and sports activities. Fourth, the traditional cultural characteristic resources in rural areas need to be tapped and inherited as they lack a systematic top-level design and have great potentials and market values. According to the survey data, 18.44% of the respondents believe that the traditional virtues and cultural resources of their villages have not been transmitted and developed. There is a need to build more sports fitness facilities, cultural activity centers, digital libraries, and museums in rural areas and expand the offering of cultural services. This should be done by involving social forces in their construction in a market-oriented way. Actions are also needed to encourage and guide farmers' participation to meet the growing cultural needs of rural residents. There are excellent rural cultural resources which can be exploited to gain people's adhesion and the use of digital technologies could play an important role in simplifying folk customs.

3 Development goals and roadmap to modernization of rural public service governance in China

3.1 Development goals

Addressing the shortcomings of rural public services and accelerating the equalization of basic public services between urban and rural areas are important aspects not only in realizing an effective connection between consolidating and expanding the goals of poverty alleviation and overcoming the difficulties in tackling rural revitalization but also a basic guarantee for realizing effective rural governance. To promote rural revitalization in the future, modernization of rural public service governance should focus on the national strategic objectives of high-quality development and high-quality livelihood. With high-efficiency governance as the norm, meeting the basic needs of inclusive public services of rural residents as the bottom line should be supported by cutting-edge technologies, such as big data, artificial intelligence, and supercomputing. This should be implemented following the highest standards to produce universal equality, comprehensive urban and rural planning, and social co-governance. These standards must be maintained right from product supply and technology supply to system supply. The aim is to promote the transformation of rural public services that merely "function" to provide "excellent" service and move from "less" to "more." The need is to ensure the gradual progress of urban and rural public services from dual supply to integration and equalization and finally improve the modernization level of rural public service governance capacity all round, so that farmers develop a sense of acquisition, happiness, and security that is more substantial, secure, and sustainable.

By 2025, remarkable achievements are hoped to be made in the modernization of rural public service governance. It is also hoped that the institutional framework, institutional mechanism, and a standards system of rural public service governance will be completed by then. By 2035, modernization of rural public service governance is expected to be realized, and a rural public service governance pattern of urban-rural integration, inclusive sharing and digital support was formed. By 2050, modernization of rural public service governance is expected to be fully realized, thus greatly improving rural residents' sense of acquisition, happiness, and security.

3.2 Development roadmap

The roadmap for the modernization of rural public service governance in China is as shown in Fig. 1.

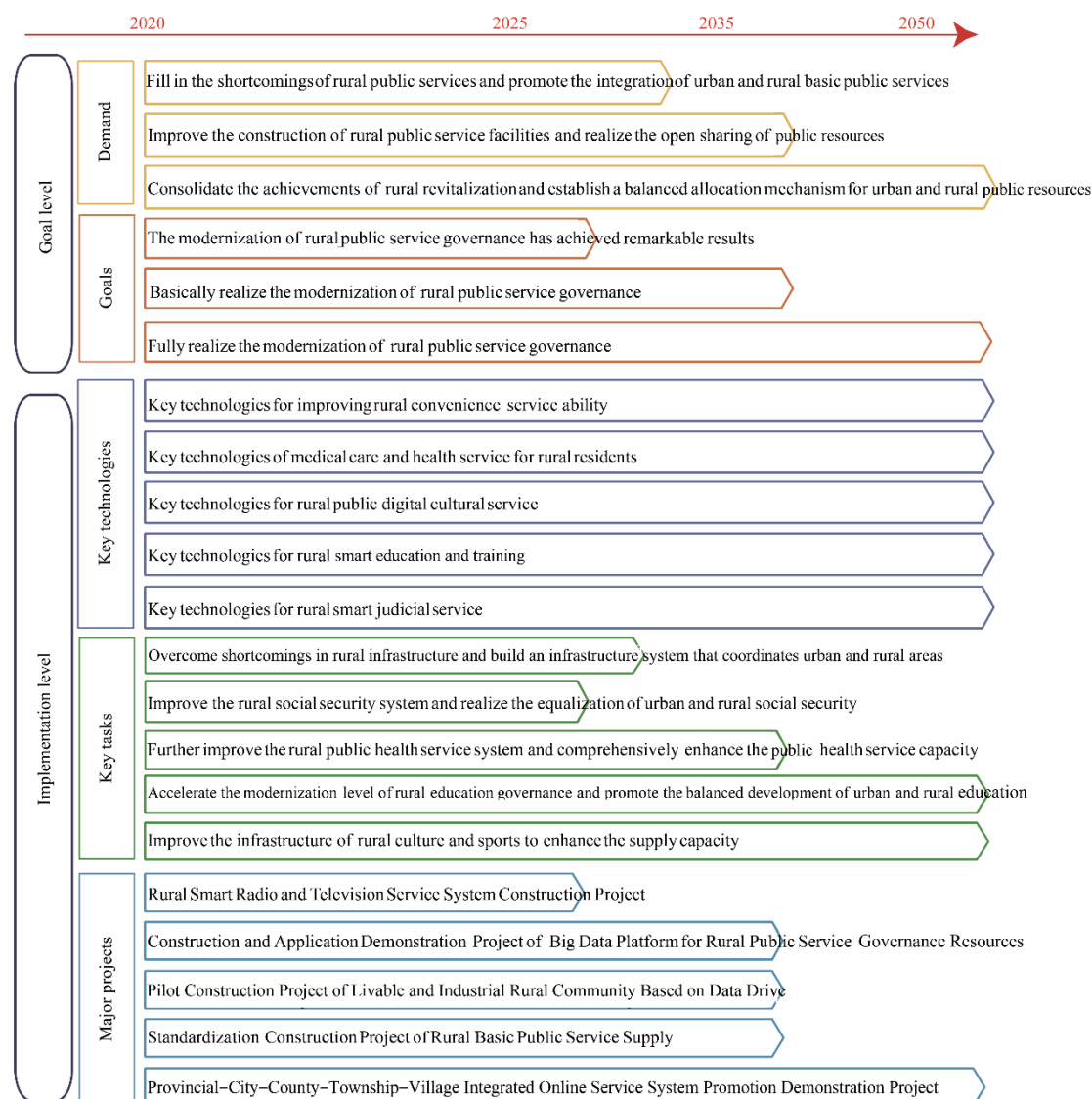


Fig. 1. Roadmap for the modernization of rural public service governance.

3.2.1. Phase I (by 2025)

Considering media integration as the breakthrough point, the goal is to promote the construction of rural smart radio and television service systems, accelerate the deep integration of rural radio and television industry with big data, 5G, 4K/8K Ultra HD, artificial intelligence, virtual reality, and other advanced information technologies. The key technologies of rural wisdom education and training will be the focus along with multimedia integration support for the construction of rural public education resource platforms. It is also proposed that key core technologies be actively changed. For instance, the plan is to build a large database of rural public services, portable intelligent monitoring, and service terminals, by using big data integration governance, big data deep learning, and big data analysis. This is expected to improve the sinking, sharing, and service capabilities of urban high-quality public service resources. Further, this will involve the integrated development of urban and rural public service resource sharing platforms and promote the co-construction and sharing of urban and rural public service resources.

3.2.2. Phase II (by 2035)

To promote intelligent and digital transformation of rural public service governance, the focus will be on addressing rural residents' medical and health issues and providing them the necessary services, enhance rural public digital cultural services, and develop key technologies for rural smart judicial services. The plan is to

conduct research and develop accurate matching prediction models and portable service intelligent monitoring terminals to create public digital service technical standards and specifications. A big data platform is expected to be built for healthy rural spatial geography, promote the construction of livable and suitable rural communities, monitor the health management of key rural populations, and accelerate the development of public service networking. The focus will also be on developing intelligent robots for public services, promoting the standardization and industrialization of agricultural robots, and providing convenient, safe, and personalized services.

3.2.3. Phase III (by 2050)

To realize the intelligence of rural public service governance, the plan is to build a rural public service governance system supported by information technology of the highest standards, which will lead to universal equality, comprehensive urban and rural planning, and social co-governance. The focus is on developing key technologies for improving rural convenience service capacity, promoting the application of human-computer interaction services in rural public services, and ensuring efficient and controllable governance of rural public services. The aim is to develop a scientific and technological service platform based on distributed resource sharing and service collaboration and a trusted management system for rural public services. This will help fully realize multi-field, multi-subject, and multi-scene personalized service and rural public service governance.

4 Key tasks in promoting modernization of rural public service governance

4.1 Improving rural infrastructure to build a coordinated infrastructure system between urban and rural areas

The first step to promote modernization of rural public service governance would be to strengthen the scientific planning and layout of rural infrastructure construction. This can be done by understanding the opportunity period of rural revitalization strategy implementation and the critical period of infrastructure upgrading in the 14th Five-Year Plan. Further, focus should continue on public infrastructure construction in rural areas. There is a need to make a reasonable increase in the investment. Taking rural construction as an opportunity, according to local conditions, overall plans will be made for urban and rural infrastructure construction such as roads, water supply, power supply, information, radio and television, flood control, and garbage and sewage. Further, the aim is to promote the integration and interconnection of urban and rural infrastructure. The second task is the construction of new rural infrastructure. This would involve improving broadband networks in rural areas and coverage of the fourth-generation mobile communication network and promoting the transformation and upgrading of rural power grids. With information delivered into villages and households, gradually 5G network construction can be explored to continuously improve the digitalization and informationization level of the rural infrastructure. The plan is to build a big data center for county rural governance and improve the mechanism of data sharing in the rural public service field, and the focus of rural public governance should be shifted from a “top-down” government service management setup to a multi-agent collaborative public service governance setup. The third is to improve rural infrastructure in terms of transportation, water conservancy, and energy. The next step is to improve the road hardening rate in large-scale natural villages in an orderly manner, improve the level of urban and rural road interconnection, build a high-speed traffic network connected with urban agglomerations and metropolitan areas, and release a stock space for comprehensive township development, utility tunnels, and multi-functional infrastructure. Further, active implementation of the construction of rural water conservancy infrastructure is required along with promoting the construction of rural water supply security projects and implementing the integration of urban and rural water supply in suitable areas. This would improve the level of clean energy construction in rural areas, promote gas supply to the countryside, and strengthen the use of clean and sustainable energy.

4.2 Improving the modernization level of rural education governance to promote the balanced development of urban and rural education

First, the authorities should adhere to the overall planning of urban and rural areas and accelerate the unification of standards and systems of public education in such areas; implement the reform and development of compulsory education integration in the county; coordinate the allocation of educational resources; and gradually establish a basic public service system for education with universal coverage, universal benefit sharing, and urban and rural integration. Taking into consideration local geography and human geography, they should reasonably arrange

township boarding schools and small-scale rural schools, improve rural school running conditions, take multiple measures to build a team of high-quality rural teachers, and lay a solid supporting foundation for the development of rural education. Second, the authorities should promote the development of rural vocational education, adult education, and online education. They should continue to improve the national education information infrastructure, embed digital technology and information technology into farmers' vocational education and adult education, and give full play to the advantages of online education. Taking real rural development needs as the starting point, they should adjust the administration and professional setting by considering farmers' employment and entrepreneurship needs; deepen school–enterprise cooperation to promote industrial integration; give full play to the professional and guiding advantages of vocational education and adult education; and considering new industries, new trends and new models, carry out targeted training, fixed-post training, and special skills training to cultivate digital and information-based rural talents. Third, they should deepen the reform of rural education governance system. They should increase the investment and support of rural compulsory education funds, and establish a reasonable educational financial system and transfer payment system; establish a support system for the capacity-building of teachers for the high-quality development of rural education by focusing on the cultivation of teachers' quality and ensuring training funds for rural teachers. In this way, we will deepen the reform of the governance structure of compulsory education, improve the evaluation criteria and mechanism for the development of rural compulsory education, implement the management model of small-scale rural schools nationwide, realize the efficient and fair allocation of rural education resources, and comprehensively improve the governance capacity of rural education.

4.3 Improving the construction of rural cultural and sports infrastructure

First, the authorities should improve the construction of basic cultural and sports facilities in rural areas. They should coordinate the construction of urban and rural public cultural and sports facilities, continue construction of basic cultural and sports infrastructure such as cultural squares and entertainment and sports facilities, and attach importance to the important role of radio and television media and county-level media centers in promoting the development of public cultural and sports facilities in rural areas. Taking the county as the unit and the village as the center, active promotion of the construction of the general branch library system for libraries and cultural centers, realization of the linkage and sharing of public cultural resources in the county, and enhancement of the efficiency of public cultural services is required. Second, strengthening of the construction of rural public digital culture and sports services is required. The suggestion is to build a one-stop public cultural and sports digital service platform, improve the rural basic public cultural and sports service system, and promote public digital cultural and sports services to reach every household. Facing farmers, online cultural activities such as exhibition on the cloud, classroom in the cloud, and online experiences will be carried out based on the digital platform, so as to improve the supply capacity of digital public cultural resources and build a new digital model of rural public cultural services. Third, it is necessary to expand the implications of rural cultural and sports services and increase effective supply; establish a demand-oriented rural public cultural and sports governance mechanism; smooth the channels of expression of farmers' needs for cultural and sports facilities in rural areas; and accurately implement the supply of public cultural and sports products and facilities. It is also necessary to make use of rural cultural and sports resources (such as ancestral halls, stages, and other public spaces). Rural cultural characteristics in different regions can be combined, and public cultural and sports activities can be carried out with the help of local non-legacy skills, so as to promote cultural and sports services in line with farmers' needs in rural areas. Fourth, it is necessary to strengthen the construction of rural cultural and sports talents by promoting team building at the two levels of cultural and sports management and business, forming a high-quality rural public cultural and sports service team, and establishing corresponding personnel training and guarantee incentive mechanism. Attracting more college graduates to join the grassroots cultural and sports service team open to public, strengthening the training of grassroots cultural teams, tapping local cultural and sports talents, increasing the cultivation of relevant talents and policy and financial support, and training literary and art associations, cultural and sports volunteers, and non-genetic inheritors rooted in rural areas is required.

4.4 Improving the rural public health service system

First, it is necessary to narrow the gap between urban and rural medical and health services to realize the equalization of basic health services for public. Based on demand, it is important to accelerate the expansion and balanced distribution of high-quality medical resources, guide the flow of high-quality medical and health

resources to rural areas, and increase the supply of medical and health public services in rural areas. Additionally, scientific evaluation of the construction and management performance of public hospitals, promotion of the reform of centralized procurement of medicines and medical consumables, improved construction of a close medical community in the county, and establishment of graded diagnosis and treatment, rational diagnosis and treatment, and orderly medical treatment, to promote the effective connection between urban and rural medical service projects and related standards is required. It is also necessary to formulate medium- and long-term plans for the development of rural medical care, improve service norms and management standards related to medical care, strengthen information management, and promote intelligent medical care. Second, it is important to strengthen the training of rural medical and health personnel. Therefore, it is necessary to moderately expand the scale of rural medical and health personnel and appropriately lower the recruitment threshold for county-level and regional grassroots medical and health institutions in hard and remote areas. The training of rural general practitioners should be strengthened, in-depth special post programs for general practitioners should be conducted, and directional medical students in rural areas should be trained to promote the transformation of rural doctors into practicing (assistant) doctors. Exchange of medical experience between urban and rural areas should be promoted by means of stationing and visiting high-level medical talents in cities. Additionally, it is necessary to improve the incentive mechanism of rural grassroots health personnel, optimize the post setting of township medical and health institutions, and implement the policy of promotion and inclination of professional titles, so that high-level talents can get in and stay. Third, it is necessary to promote the extensive application of “Internet+” medical care. Promotion of “Internet+” medical services in rural areas, establishment of management and assessment standards for rural online medical services, and full optimization and integration of Internet, big data, supply chain, and other technologies in the allocation of social resources is needed. In rural areas, Internet-based medical enterprises will be introduced in a standardized manner, telemedicine information systems will be set up, telemedicine consultation, imaging diagnosis and other medical services will be carried out, and high-quality medical services will be supported. Remote training will be provided to primary-level medical staff to provide data support for the implementation of graded diagnosis and treatment and enhance the modernization capacity of rural medical and health management.

4.5 Improving the rural social security system to realize the equalization of urban and rural social security

First, it is necessary to develop and establish a unified social security system in both urban and rural areas. The strengthening of top-level designs, optimization of resource allocation, reduction in the social security gap between urban and rural areas, and improvement in the unified national basic medical endowment insurance system and endowment insurance system should be ensured. The basic pension standard requires adjustment in light of local conditions while considering the level of regional economic and social development and the per capita income of urban and rural residents. The development of systems for rural subsistence allowances, provision of medical treatment for serious diseases, and social assistance as well as research and development of technical service products should be promoted. There will be focus on consolidating poverty alleviation achievements by implementing tiered social security plans, strengthening training as the internal driving force behind poverty alleviation, and promoting the establishment of a unified national social security system with full coverage and equal access. Second, full play should be given to the role of modern information technology in the construction of the rural social security system. It is necessary to promote the promotion and application of “Internet+” human resources and social security in rural areas, integrate existing rural social security information resources, simplify the specific process of social security information management system; and build a unified social information platform based on big data, cloud computing, and the Internet of Things to further integrate the original data of various departments to realize the interconnection and sharing of social security data. It is necessary to excavate and analyze the important values of digital technology in the construction of rural social security system and establish a sensitive social security monitoring mechanism. Third, a diversified rural old-age service model should be established to break the traditional old-age care model, innovate the guarantee method, coordinate and increase investment in multiple departments, and explore the guarantee mechanism of old-age care with the participation of multiple subjects such as public construction, private operation, and private office assistance. Further, it is necessary to explore a new path for the development of rural old-age services and form a rural diversified old-age service supply system involving rural central nursing homes, social organizations, and professional social workers. Development of new old-age service models, such as those concerned with providing home-based care and community-based care, should be promoted in rural areas. An old-age information service platform should be

established to satisfy the diversified old-age needs of rural older adults with the help of “Internet+” resources, allowing the establishment of a more effective and targeted rural old-age service system.

5 Measures and suggestions

5.1 Clarifying the list of key governance objects and supply of rural public services

This study suggests that, first, the shortcomings of basic public services should be solved and the accessibility of rural public services should be improved. Investment in resources and facilities in rural basic education and special education, medical and health care, and culture and sports should be increased; care for left-behind children, women, the disabled, and older adults should be strengthened; the level of rural social security and rural community services should be improved; and the accessibility of basic public services in rural areas should be improved at the earliest. Second, the list and standards of the rural basic public service supply should be formulated and presented, and the institutionalization and standardization of rural public service governance should be gradually realized. The unification of the basic public service system in urban and rural areas should be promoted, and a list of basic public service supply for rural areas in the field of education, labor employment and entrepreneurship, social insurance, social services, medical and health care, housing security, culture and sports, and services for the disabled should be formulated. A guiding standards system for the rural basic public services should be established; and effectiveness of the standards implementation should be monitored accordingly. Third, routine evaluation and self-discipline supervision of the rural public service governance level should be conducted. The social supervision and industry self-discipline of rural public services should be strengthened, and an evaluation index system for the effect of rural basic public services should be established. Focusing on governance means, public participation, and service satisfaction, the rural public service governance level should be evaluated annually, and public service institutions, employees, and management departments that fail to pass the evaluation shall hold corresponding accountabilities.

5.2 Accelerating the intelligent and digital construction of rural public service governance

The study suggests that, first, rural basic public service information files should be made available in order to promote information linkage and data sharing. Rural basic public service matters need to be comprehensively resolved; rural basic public service information files including those related to education, medical care, social security, employment, and culture should be declared; and information and data related to basic public services should be collected, sorted, and digitalized. Communication and cooperation with the public security, civil affairs, medical care, education, and other departments should be strengthened; information linkage and data sharing should be improved, and the grassroots public service process should be significantly simplified and optimized. Second, advancement in the 5G demonstration of the application of satellite remote sensing, media convergence, and other technologies in the rural basic public services is required. The application and deepening of information technology in rural basic public service governance, such as 5G, Internet of Things, satellite remote sensing, Beidou navigation, artificial intelligence, and media convergence should be promoted, forming an infrastructure and basic public service system with efficient resource allocation, information sharing, and urban–rural integration. Third, a basic public service information sharing platform should be established and the allocation of basic public service resources should be optimized. Considering the Internet and mobile terminals as carriers and taking rural education, medical care, employment, social security, culture, and other basic public service areas as the core, a unified platform for urban and rural basic public service information sharing can be established. A data resource catalogue and data open list of various departments need to be prepared; a long-term mechanism for the co-construction and sharing of data resources of various departments should be established; and the equalization and accessibility of basic public services in urban and rural areas should be promoted.

5.3 Promoting a multi-subject collaborative governance in rural areas

First, this study proposes that the functions of grassroots government should be transformed to reshape a modern governance system of grassroots government. Grassroots governments actively play the role of “guides” and “supervisors” in the modernization of rural public service governance; they implement the medium- and long-term development plan of rural public service governance and establish the performance evaluation system and standards of the rural public service governance. Second, villagers, enterprises, and social organizations should be encouraged to actively participate in and improve the level of collaborative governance involving multiple

subjects. Modern means should be used to broaden the channels for villagers to participate in self-governance; the Sunshine Project of Village Affairs should be promoted; villagers' public affairs participation platforms and mobile terminals such as online village committees should be actively developed; support should be provided to qualified areas to establish big data platforms for rural public opinion expression, thereby strengthening the exchange and sharing of rural public culture, enhancing the radiation ability of rural traditional culture, and enhancing villagers' sense of belonging and gain. The enthusiasm and creativity of villagers to participate in rural public service governance should be better mobilized. Third, the empowerment of rural public service organizations and the ability of rural social organizations to provide public services should be promoted. The system and mechanism of social organizations participating in rural public service governance should be improved and their dominant position in rural public service governance should be recognized. A platform and channel should be established for social forces to participate in rural public service governance. The importance of social capital in developing new infrastructure construction, digital resource collection, governance platform development and maintenance, and other businesses related to rural governance should be recognized. Finally, the market-oriented operation mechanism of rural public service digital governance should be further developed.

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