



Synthesis of Research on Rural Public Service Models in the Context of Digital Village Construction

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Abstract. The purpose of this paper is to synthesize the changes and innovations in the rural public service model in the context of digital village construction. In view of the current context of digital village construction, it explores the role and impact of digital technology in changing the rural public service model, farmers' new demands and expectations for public services, and the innovation and reform of the rural public service system by the digital transformation, to further indicate the far-reaching impact of digital village construction on the rural public service model. In the study of change and innovation, three aspects are explored, namely, cooperative service model, community participation model and personalized service model, which are expected to provide theoretical support for the transformation of rural public service model. Finally, the impact of digital transformation on the future development trend of rural public service model is summarized, the direction of policy formulation is clarified, and policy paths to promote the optimization and innovation of rural public service model under the construction of digital countryside are proposed, which is expected to give new ideas to the field of rural public service research.

Keywords: digital village construction; rural public services; service model; synthesis of research.

1 Introduction

The construction of digital villages is a modern agricultural development and transformation process that naturally occurs as farmers' digital literacy improves, against the backdrop of the continuous integration of networked, informatized and digitized technologies into the economic and social development of agriculture and rural areas. This process is critical to the modernization of the "three rural areas", which constitutes the core direction of the rural revitalization strategy and a key component of the framework for building a digital China¹. According to the Action Plan for the Development of Digital Villages (2022-2025) released in January 2022, accelerating the construction of digital villages is necessary, and the achievement of this goal relies on the creation of a rural public service model adapted to the requirements of digital villages in the new era.

In recent years, under the impetus of the "Internet Plus" modern agriculture initiative in China, the degree of integration between information technology and agricultural development has been significantly improved. However, the limitations of the urban-rural dichotomy have made the network infrastructure in rural areas relatively weak, and the Internet penetration rate, especially the access capacity, is low, resulting in the development of the rural public service system lagging behind, and making it difficult to satisfy the needs of farmers for a better life². For example, in terms of consumption, Li X.R. and Fan J. based on empirical study found that the construction of digital villages has a direct impact on rural residents' consumption of food, living, and transportation and communication, but there is a lag in the impact on upgraded consumption such as education, culture and entertainment, and health care³. Peng Y.Y. and Xu J.Y. from the perspective of the diversification of rural residents' consumption forms, pointed out that the construction of digital villages has promoted the consumption upgrading of rural residents, but it also faces the problems of insufficient digital literacy and capacity of rural residents⁴. At present, in the context of digital village construction, the academic community pays more attention to the impact of digital village construction on farmers' income, rural governance and rural market development than to the study of rural public service models. For example, Qi W.H. et al. used empirical research methods to examine the impact of digital village construction on rural residents' income increase, and concluded that channels and paths such as the Internet, e-commerce platforms, and inclusive finance would promote rural residents' income increase⁵. Chen G.S. and Shi Z.N. from the perspective of urban-rural integration, studied the relationship between digitalization leading the ability of common wealth and rural governance⁶; Chang Q. and Li J. believe that informatization is bound to produce a push force on rural society, and the construction of digital villages is to infiltrate information technology into all fields and links of rural governance⁷. Zhou X.B.'s study further examines the mechanism of digital village construction on the development of rural markets, and concludes that digital village construction is conducive to promoting the level of rural market agglomeration, circulation power and purchasing power⁸.

Accordingly, the purpose of this paper is to sort out and evaluate the changes and development trends of the rural public service model in the context of digital village construction, so as to provide certain references and inspirations for the further development of the rural public service model in the context of digital transformation.

2 Impact of Digital Village Construction on the Rural Public Service Model

2.1 Role and Impact of Digital Technologies in Changing the Rural Public Service Delivery Model

Today, with the increasing development of digital technology, its application has had a significant impact on the rural public service model, promoting changes and innovations in the way public services are provided. First, the introduction of digital technol-

ogy has made rural public services more efficient and convenient. Grass-roots organizations have improved the quality and accessibility of services through the establishment of online service platforms that allow rural residents to access information in real time and enjoy remote civil affairs services⁹. Secondly, digital technology promotes the precision of rural public services. Utilizing big data analysis and artificial intelligence technologies, farmers' needs and preferences can be better understood and more precise livelihood services can be provided¹⁰. In addition, digital technology has promoted cross-border cooperation in rural public services. By building a public service system with the participation of multiple parties, including the government, enterprises and civil organizations, it is possible to share resources and complement each other's strengths, and improve the overall effectiveness of public services¹¹.

However, digital technologies also face a number of challenges in changing the rural public service paradigm. For example, inadequate network infrastructure in rural areas may lead to a widening of the digital divide, affecting farmers' access to and use of digital public services; and farmers' digital poverty may also be an important constraint to the development of digital public services¹². Therefore, there is a need to strengthen the network infrastructure in rural areas and improve the digital literacy of farmers while advancing digital technologies in order to achieve a sustainable digital transformation of rural public services¹³.

2.2 Farmers' New Needs and Expectations for Public Services in the Context of Digital Village Construction

With the rapid progress in building digital villages, farmers' demand for public services has shifted from the need for traditional livelihood services to the need for high-quality, customized and diversified services¹⁴. In terms of customization needs, farmers expect fast and precise access to the services they need through digital platforms¹⁵. In addition, the demand for diversified services such as intelligent health services, leisure and recreation, culture and education is also growing gradually to make up for the inadequacy of traditional public services¹⁶. Farmers also hope to broaden public service channels, including online social security, online assistance, online reporting, etc., in order to realize remote and efficient access to services and democratic participation¹⁷. At the same time, there is a growing demand for digital literacy training among farmers to enhance their ability to accept and use digital public services¹⁸. Finally, farmers' expectations of rural governance and community participation are rising, with expectations of resource sharing and collaboration through digital platforms¹⁹. Therefore, the construction of rural public services needs to be complemented by the construction of digital villages, and the scope of services needs to be continuously improved and expanded to meet the growing multi-level public service needs of farmers.

2.3 Digital Transformation for Innovation and Reform of Rural Public Service Systems

The rapid development of intelligent and information technology has made the rural public service model more open, interconnected, cross-boundary and intelligent, while

digital transformation has provided technical support and material basis for service innovation and the rise of new service models²⁰. Digital transformation has accelerated the reform and improvement of the rural public service system, providing new ideas and tools, such as building digital e-platforms, promoting digital infrastructure, and improving the standards and transparency of public services²¹. Digital transformation has introduced new mechanisms and tools in the governance of the rural public service system, building digital service systems and information-sharing platforms, etc., which have enhanced communication and synergy between the management levels of public services²². In summary, digital transformation has a far-reaching impact on the innovation and reform of the rural public service system, and at the same time provides solutions to the new opportunities and challenges it faces. Therefore, the contribution of digital transformation to the rural public service system can be further explored, as well as how to optimize public services and build a better public service system.

3 Changes and Innovations in the Rural Public Service Model

3.1 Collaborative Service Model

In the context of digital village construction, the cooperative service model has become an important direction of exploration for the change and innovation of the rural public service model. The cooperation between the government, enterprises and social organizations is considered to be an innovative practice for the effective integration of resources and the enhancement of service efficacy, which reflects the organic combination of the government and the market mechanism, and at the same time realizes the diversification of the supply of public services through the intervention of social organizations, thus promoting the optimization and enhancement of rural public services²³. The operation of the cooperative service model depends on multiple factors, such as the willingness of the parties to cooperate, resource integration and coordination of the distribution mechanism, and therefore some problems have been revealed in practice, such as unfair distribution of resources, complex processes, unclear rights and responsibilities, and so on²⁴. In order to further explore the feasibility and effectiveness of this model in the construction of digital villages, it is necessary to carry out continuous research and improvement in terms of resource integration, process optimization, and clarification of rights and responsibilities.

3.2 Community Participation Model

The community participation model is another important direction of exploration for change and innovation in the rural public service model. The theoretical basis of this model is community autonomy, social participation and equal cooperation, and the core of its operation is the establishment of residents' self-governing organizations and the construction of community service platforms. The community participation model regards residents as the main body of public services and decision-making participants, and realizes the democratization, transparency and high efficiency of public services through the formulation of service projects and management rules, and the maintenance

of service quality and efficiency²⁵. At the same time, the operation of the community participation model involves many factors such as community self-governance, the establishment of participation levels, and the rational distribution of rights and obligations, and also faces problems such as the quality of the residents, the lack of hardware, and the lack of resources²⁶. In order to further improve the application of the community participation model in digital village construction, it is necessary to deepen the research in terms of institutional arrangements, collaboration mechanisms, service processes, etc., to promote more efficient and rational public service provision and management²⁷.

3.3 Personalized Service Model

The personalized service model realizes the individualization, differentiation and refinement of services, which can better meet the diversified needs of rural residents and improve the relevance and satisfaction of services. In the construction of digital villages, the personalized service model has been widely used in education²⁸, medical care²⁹, pension³⁰, financial services³¹ and other fields, and has gradually been recognized by the government and the market. The operation mechanism and implementation effect of the personalized service model involves factors such as classification and identification of service targets, personalization of service content and mode, and improvement of service quality and efficiency³². At the same time, some problems may arise in the implementation of the model, such as uneven allocation of service resources, etc. Therefore, it is necessary to carry out detailed research and improvement from the aspects of service objects, service content, service platform and service environment, etc.³³.

4 Conclusion and Outlook

4.1 Summary

In the context of the implementation of the digital countryside strategy, the rural public service model has received extensive attention and research. This paper explores and summarizes the change and innovation of rural public service model in the context of digital village construction through literature review. It is found that digital village construction infuses the concepts of digital technology, informatization, intelligence and ecology into the rural public service model, promoting the refinement and inclusion of public services. In terms of model change and innovation, the resident-centered community participation model and personalized service model have become the development trend, using digital technology to deepen the popularity of public services and improve service quality. At the same time, the improvement and innovation of rural public services require the cooperation of the government, the market, the society and the residents in order to realize the sustainability and fairness of public services. In this regard, further research in the future can deepen the discussion from the aspects of policy guarantee, service quality, social participation and digital technology to promote the optimization and upgrading of the rural public service model. In conclusion, the

construction of digital villages provides a historical opportunity for the change and innovation of the rural public service model, which is of great significance for promoting rural development and social progress.

4.2 Impact of Digital Transformation on Future Trends in the Rural Public Service Model

Digital transformation has become an important development trend in modern society, and will also have an important impact on the future development of the rural public service model. First of all, digital transformation will enhance the popularization and refinement of rural public services, such as digital service reservation, informatized service reminder, intelligent service experience, etc., which will better solve the problems of service quality, responsibility implementation, resource utilization, etc.³⁴. Secondly, digital transformation will promote the sharing and differentiation of rural public services, such as digital population classification, informatized regional distribution, intelligent service content, etc., which will better realize the universality and personalization of public services³⁵. Finally, digital transformation will expand the delivery channels and innovative modes of rural public services, such as digital service platforms, informatized social organizations, intelligent community modules, etc., which will better realize the sustainability and innovation of public services³⁶. Although digital transformation will bring many opportunities and challenges, the digital transformation of rural public service models will be better adapted to the new trends and environment of digital transformation through comprehensive cooperation and active exploration among the government, market, social organizations and residents. Therefore, future research could delve further into the aspects of flexibility and sustainability of rural public service models under digital transformation.

4.3 Policy Paths to Promote Optimization and Innovation of Rural Public Service Models under Digital Village Construction

The continued optimization and innovation of the rural public service model requires policy support and guidance, which can be considered in the following areas. First, it is necessary to raise the importance of digital rural construction in policy, and pay more attention to the application and development of digital technology in the field of rural public services at the national level. Second, a sound digital rural public service system should be established to promote cooperation among the government, market, social organizations and residents to form an ecosystem of digital public services. Once again, the popularization and application of digital technologies should be strengthened in rural areas to improve the level of digital literacy of residents and the ease of using digital technologies. In addition, policy formulation should also start from improving the quality of public services, expanding the scope of public services and promoting innovation in public services to strengthen the policy support and guarantee of the rural public service model under the construction of digital villages. In future research, further in-

depth studies can be conducted on the implementation effect, implementation and continuous improvement of relevant policies to promote the policy improvement of the rural public service model under the construction of digital villages.

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