

Original Paper

Digital Empowerment in the Construction of a Dialogue Support Mechanism for Left-Behind Children

Jing Xu¹

¹ Zhejiang Sci-Tech University, Hangzhou, Zhejiang, 310018, China

Received: January 29, 2026

Accepted: March 23, 2026

Online Published: April 8, 2026

doi:10.22158/assc.v8n2p112

URL: <http://dx.doi.org/10.22158/assc.v8n2p112>

Abstract

In the process of advancing rural revitalization and common prosperity strategies, the development of a care and service system for rural left-behind children is a crucial livelihood project (All-China Women's Federation, Ministry of Civil Affairs, Ministry of Education. Opinions on Strengthening the Care and Protection of Rural Left-Behind Children, 2021). Addressing current challenges in supporting left-behind children—including fragmented information, poor supply-demand matching, insufficient companionship services, and low digitalization—this study takes Wencheng in Wenzhou and Xianju in Taizhou, Zhejiang Province as research pilot sites. Using field research, system design, case analysis, and other methods, it constructs the Travel with Digital Children digital map platform and dialogue support mechanism for left-behind children. Findings indicate that the digital platform effectively improves the accuracy of support and social participation, enhances the psychological well-being and growth environment of left-behind children (Chen & Zhang, 2019), and provides a replicable and scalable practical path for the digital transformation of care services for left-behind children in 26 mountainous counties and similar regions (Li & Wang, 2023).

Keywords

Rural Revitalization, Left-Behind Children, Digital Support, Dialogue Support Mechanism, Digital Map

1. Introduction

1.1 Research Background

Common prosperity is the essential requirement of socialism and a core feature of Chinese-style modernization. Against the backdrop of comprehensively promoting rural revitalization, the focus of work concerning agriculture, rural areas, and farmers has shifted historically, and people's well-being has become the core indicator for measuring development effectiveness. Child development is a

fundamental part of livelihood security; the healthy growth of rural children is directly linked to talent revitalization, industrial revitalization and rural sustainable development, serving as a key pillar for achieving comprehensive rural revitalization. With the gradual implementation of the 14th Five-Year Plan and the 2035 Long-Range Objectives, China's rural child development has entered a critical stage of transformation and upgrading, and improving the care and service system for rural left-behind children has become an urgent task.

At present, rural left-behind children still face problems such as lack of companionship, insufficient psychological counseling, inadequate behavioral guidance and weak safety protection. The traditional support model, dominated by governments and public welfare organizations, has shortcomings such as information asymmetry, single service forms, insufficient resource integration and low precision, which cannot meet the normalized, emotional and personalized needs of left-behind children^[2]. As a demonstration zone for common prosperity, Zhejiang Province has relatively prominent unbalanced development in its 26 mountainous counties, and the problems of wide distribution, clear baseline and difficult service of left-behind children need to be solved urgently (People's Government of Zhejiang Province, 2023).

Based on the College Students' Innovation and Entrepreneurship Training Program, this study takes left-behind children in Wencheng and Xianju as samples. Through in-depth research covering 165 villages and 288 households, it systematically analyzes demand pain points and service shortcomings, designs and develops the Travel with Digital Children digital map platform, and explores a new care service model with the collaborative participation of governments, schools, communities, families and social forces, providing practical references for the digital construction of the rural child care system.

1.2 Research Significance

1.2.1 Theoretical Significance

This study introduces digital theories such as digital mapping, big data governance and O2O closed-loop operation into the field of left-behind children's care services, filling the domestic research gap in digitalization, platformization and systematization of left-behind children support, and enriching the theoretical system of the interdisciplinary field of rural child welfare and digital public welfare^[6]. Centered on the LOCK closed-loop business model, this study establishes a public welfare operation framework centered on the chain of "Left-behind Children — Online Platform — Community — Precision Services". This framework enhances theoretical exploration into the market-oriented and socialized sustainability of public welfare projects. More importantly, it provides solid support for the transformation of rural child care services from traditional one-way supply to multi-stakeholder collaborative governance.

1.2.2 Practical Significance

Relying on 3D digital mapping and big data collection technologies, it dynamically presents the distribution, demand profiles and service resources of left-behind children, solving the problems of unclear baseline, fragmented information and poor supply-demand matching in traditional support,

realizing one file per child, one match per demand, and greatly improving resource allocation efficiency and service precision.

It builds a four-dimensional dialogue support system integrating online dialogue, letter companionship, offline activity rooms and social linkage. Through carriers such as the Baiyangyang Mailbox, online community and themed aesthetic education activities, it regularly meets the core needs of left-behind children such as emotional communication, psychological counseling, social interaction and academic support, effectively improving their psychological state and growth environment.

It provides a one-stop participation portal for volunteers, university teams, enterprises and public welfare organizations, broadening the channels for social forces to participate, stimulating the enthusiasm of national public welfare, and forming a care pattern with multi-linkage of governments, schools, communities, families and society.

With Wencheng in Wenzhou and Xianju in Taizhou as pilots, it forms a standardized platform architecture, operation process and service model, which can be quickly replicated and promoted to 26 mountainous counties in Zhejiang and similar regions nationwide, providing a feasible practical plan for the digital transformation of rural left-behind children's care service system under the background of rural revitalization.

Through diversified revenue-generating methods such as cultural and creative malls, third-party settlement and activity services, it changes the dilemma of traditional public welfare over-reliance on external funding, achieving self-sustainability and long-term operation, and shifting care services for left-behind children from short-term support to long-term guardianship.

1.3 Domestic and International Research Status

Foreign research focuses on child welfare, minor protection and digitalization of community services, forming a service system led by governments, participated by society and supported by professionals, and attaching importance to data platform construction and psychological intervention. However, due to significant differences in urban-rural structure and family models from China, relevant achievements are difficult to directly adapt to rural left-behind children scenarios.

Domestic research concentrates on education, psychology, safety and social support of left-behind children with abundant achievements, but has obvious shortcomings: first, insufficient research on digital support, mostly staying at traditional public welfare and offline services, lacking platform-based and intelligent solutions; second, insufficient systematic integration, fragmented information, poor supply-demand matching and lack of long-term operation mechanisms; third, weak exploration of sustainable models, over-reliance on external funding and insufficient self-sustainability. Overall, existing research lacks an integrated solution with digital mapping as the carrier, dialogue support as the core and closed-loop ecology as the support. This study takes this as the entry point to make up for the current research gap (Li & Wang, 2023).

1.4 Research Content and Methods

Research Content: Analysis of the current status and problems of left-behind children support; design

and construction of the digital map platform; operation of the dialogue support mechanism; practical effects and optimization paths.

Research Methods: Literature research method, field research method, system design method, case analysis method, business model analysis method.

1.5 Innovations

1.5.1 Model Innovation: Constructing the LOCK Closed-Loop Public Welfare Business Model

Breaking through the limitations of one-way and unsustainable traditional public welfare models, this study innovatively proposes the LOCK closed-loop business model. The framework centers on four pillars: Left-behind children as the core, the online platform as the entry point, the community as the support base, and key services as the critical component. These elements are organically connected through data sharing, forming a complete O2O support ecosystem that spans demand collection, resource matching, service delivery, feedback optimization, and revenue reinvestment.

1.5.2 Technological Innovation: 3D Digital Mapping Empowering Precise and Visual Support

Leveraging big data, 3D visualization, and AI-powered intelligent review, the platform builds an exclusive digital map for left-behind children. It enables one-screen visualization, one-click query, and full traceability of children's distribution, demand information, service locations, and resource coordination. This system addresses the limitations of traditional support, such as fragmented data, delayed updates, and weak oversight. Through technological empowerment, it transforms service delivery from extensive, blanket-style aid to targeted precision support, while enhancing the intelligence and safety of care services.

1.5.3 Mechanism Innovation: Building an Online-Offline Integrated Dialogue Support System

Breaking through the limitation of material-based support, it constructs a four-dimensional linkage mechanism of online dialogue, letter dialogue, offline dialogue and social dialogue. Relying on carriers such as Baiyangyang Mailbox, online community, offline activity rooms and volunteer linkage, it focuses on the spiritual needs and psychological growth of left-behind children. Meanwhile, a full-process safety mechanism is established to achieve warm, sustainable and interactive in-depth companionship support under the premise of ensuring children's safety.

2. Relevant Theoretical Foundations

This study takes rural revitalization and child development theory, digital governance theory and multi-stakeholder collaborative governance theory as core supports (Zhang, 2022). Combining the practical needs of left-behind children support, it organically integrates macro policy orientation, digital technology logic and grassroots governance practice, providing a theoretical basis for the Travel with Digital Children digital map platform and dialogue support mechanism.

The theory of rural revitalization and child development points out that rural talent revitalization and livelihood improvement are inseparable from the healthy growth of children. The right to development and happiness of left-behind children are important livelihood indicators for measuring the

effectiveness of rural revitalization. Simple material support cannot meet children's long-term growth needs; it must shift to developmental and companion support, providing the fundamental direction for the project's focus on psychological counseling, emotional companionship and aesthetic education empowerment.

Digital governance theory emphasizes solving information asymmetry and service fragmentation through data integration and technological empowerment. Traditional left-behind children support faces problems such as unclear baseline, inefficient matching and insufficient supervision. Technologies such as digital mapping, big data profiling and AI review can realize precise demand identification, integrated resource scheduling and full-service traceability. Combined with the practical thinking of this project, digitalization is not simply moving offline services online, but reconstructing support processes with technology to make public welfare services more transparent, efficient and safe (Wang & Zhang, 2022).

Multi-stakeholder collaborative governance theory proposes that care for left-behind children requires the joint participation of governments, schools, communities, families and social forces. A single entity cannot cover the full-chain services of psychology, education, safety and growth; clear division of labor and collaborative efforts are necessary. Based on this, the study further considers that in rural grassroots scenarios, communities are the most accessible carriers for children, and online platforms are the link connecting all parties. Only by combining platform coordination + community implementation + social participation can a truly long-term operational support system be formed, avoiding short-term and formalistic public welfare projects.

3. Analysis of the Current Status and Problems of Left-Behind Children Support

3.1 Research Overview

From 2023 to 2024, the research team conducted field research in Wencheng, Wenzhou and Xianju, Taizhou, covering 165 villages and 288 households, traveling over 3,000 kilometers. Through in-depth communication with left-behind children, it grasped their living conditions, psychological states, demand characteristics and service shortcomings.

3.2 Main Existing Problems

The current support system for left-behind children still has overall shortcomings, with prominent information asymmetry and data fragmentation. Left-behind children are widely distributed with untimely data updates, lacking a unified visual management platform, leading to unclear support baseline and low supply-demand matching efficiency. Traditional support is dominated by governments and public welfare organizations with few and high-threshold channels for social force participation, making it difficult to form a multi-stakeholder participation pattern, resulting in weak overall service capacity and insufficient sustainability.

Meanwhile, support methods are still mainly material supply, with shortage of refined services such as psychological companionship, emotional communication and behavioral guidance, and extensive

service models that cannot accurately match the personalized and normalized needs of left-behind children. In addition, the overall digitalization level of support is low, lacking an integrated platform for intelligent interaction, supply-demand matching and safety supervision, over-reliance on external funding, weak self-sustainability, and difficulty in achieving long-term stable operation.

4. Related to the Travel with Digital Children Digital Map

4.1 Platform Construction

Positioned for precise care, long-term operation and multi-stakeholder collaboration, the platform adopts the core architecture of One Map, Five Modules, relying on digital technology to build a digital support carrier for left-behind children. The digital map module presents the distribution of left-behind children, service resources and activity room locations through 3D visualization, realizing queryable demands, visible resources and traceable services.

Baiyangyang Activity Rooms serve as offline physical positions, providing aesthetic education, custody, companionship and practical activities. Baiyangyang Mailbox focuses on emotional communication and psychological counseling, building a warm companionship channel through letters. My Community is used for information release, volunteer recruitment and online interaction, lowering the threshold for social participation. The Surrounding Mall achieves public welfare revenue through cultural and creative development to feed back support projects.

With the LOCK business model as the operation core, the platform takes left-behind children as the center, online platform as the entrance, community as the support and precision services as the key to form closed-loop operation; it is supported by technologies such as big data, AI review, privacy protection and hierarchical supervision to ensure safe, standardized and sustainable operation.

4.2 Operation System of the Dialogue Support Mechanism

Centered on multi-stakeholder collaboration, full-process safety and online-offline integration, the dialogue support mechanism constructs a standardized operation system. A dynamic data update mechanism is established through community submission, field research and platform declaration to ensure information accuracy and strict privacy protection.

A five-in-one collaboration mechanism of governments, schools, communities, families and society is built to clarify responsibilities of all parties, realizing organic connection of policy coordination, education supply, implementation management, guardianship linkage and social participation. Focusing on the four-dimensional paths of online dialogue, letter dialogue, offline dialogue and social dialogue, it provides integrated services including real-time interaction, peer letter companionship, offline aesthetic education guidance and volunteer and enterprise linkage.

Meanwhile, a full-process safety mechanism of real-name authentication, guardian binding, dual content review and risk early warning is established to ensure the safety, effectiveness and traceability of the support process.

5. Practical Application and Effect Analysis

The project has been implemented in Wencheng, Wenzhou and Xianju, Taizhou as pilots, completing data collection of left-behind children, construction of Baiyangyang Activity Rooms, volunteer recruitment and platform testing, with stable and smooth overall operation. Relying on the digital map and dialogue support mechanism, the project achieves precise services, establishing a management model of one file per left-behind child and one-click demand matching, significantly improving information asymmetry and resource misallocation in traditional support.

Combining online interaction, letter companionship and offline activities, it effectively fills the gap in emotional companionship and psychological counseling for left-behind children, with obvious optimization of their psychological state, social ability and growth environment. The platform greatly lowers the threshold for social participation, attracting extensive participation of universities, public welfare organizations, enterprises and the public, forming a public welfare atmosphere of multi-stakeholder participation and collaborative efforts.

Meanwhile, diversified revenue-generating methods such as cultural and creative malls and third-party cooperation effectively improve the project's self-sustainable operation capacity, breaking away from the dilemma of traditional public welfare over-reliance on external funding. The overall model has a clear architecture, standardized process and controllable cost, possessing typical value for replication and promotion to 26 mountainous counties in Zhejiang and similar regions, providing a practical sample for the digital transformation of rural left-behind children's care services that can be implemented and referenced.

6. Conclusion

Against the backdrop of rural revitalization and the construction of a common prosperity demonstration zone, the care and protection of left-behind children have evolved from a single social welfare issue into a key project concerning people's well-being, rural sustainable development, and the modernization of grassroots governance. The digital empowerment practice centered on the Travel with Digital Children digital map platform and dialogue support mechanism responds to the realistic dilemmas of traditional care models, such as information fragmentation, inaccurate service matching, insufficient spiritual companionship, and weak sustainability. It uses digital technology as a tool, dialogue support as a core, and multi-stakeholder collaboration as a path to explore a new paradigm for the long-term guardianship of left-behind children, which is of profound theoretical value and practical guiding significance.

This study confirms that digital mapping, big data governance, and O2O closed-loop operation can effectively break the information barrier in the care of left-behind children. The 3D visualized digital map realizes the full-chain management of "one file per child, one match per demand", which greatly improves the precision and efficiency of support services. The four-dimensional dialogue support system integrating online communication, letter companionship, offline interaction, and social linkage

transcends the traditional material-oriented assistance model, focusing on the emotional needs and psychological growth of left-behind children, and effectively enhances their sense of gain, happiness, and security. The LOCK closed-loop public welfare business model, with left-behind children as the core, online platform as the entrance, community as the support, and precise services as the key, solves the long-standing problem of over-reliance on external funding in traditional public welfare, and promotes the transformation of care services from short-term projects to sustainable operations. The pilot practice in Wencheng and Xianju has achieved positive results in service optimization, social participation expansion, and operational self-sustainability, proving that this digital empowerment path is feasible, replicable, and scalable, and can provide a reference for the 26 mountainous counties in Zhejiang and similar rural areas across the country.

At the same time, this study also reflects that the digital care of left-behind children is a systematic project requiring long-term investment and iterative optimization. In the future, with the continuous iteration of digital technology and the continuous upgrading of children's growth needs, the platform needs to further optimize the intelligent matching algorithm, strengthen the integration of cross-regional resources, and expand the application scenarios of aesthetic education, mental health intervention, and career planning. It is also necessary to further consolidate the collaborative governance mechanism of governments, schools, communities, families, and social forces, improve the professional level of volunteer teams and grassroots service personnel, and build a more comprehensive safety supervision and privacy protection system to ensure the standardized and healthy development of digital care services.

The care for left-behind children is a vivid practice of people-centered development thought. Digital empowerment is not only a technical means but also a value orientation of equal growth opportunities and inclusive social development. This study takes the dialogue support mechanism as the starting point and digital empowerment as the driving force, trying to build a warmer and more intelligent growth environment for left-behind children. It is hoped that this practice can attract more social attention and resource investment, promote the continuous innovation and improvement of the rural left-behind children care and service system, and let every left-behind child grow up with care, companionship, and hope. In the process of advancing rural revitalization and common prosperity, the healthy growth of left-behind children will become a bright light illuminating the road of rural development, and lay a solid foundation for cultivating new forces for rural construction and realizing the all-round revitalization of rural areas.

Fund Project

This paper is supported by the 2024 National College Students' Innovation and Entrepreneurship Training Program (Project No. 202410338005X), entitled "Traveling with 'Digital Children': Building a Digital Map Platform for Dialogue-Based Support Mechanisms for Left-Behind Children".

References

- All-China Women's Federation, Ministry of Civil Affairs, Ministry of Education. *Opinions on Strengthening the Care and Protection of Rural Left-Behind Children*. (2021). Document of the General Office of the State Council.
- Chen, C. W., & Zhang, X. Q. (2019). Mental Health Status of Rural Left-Behind Children and the Construction of Social Support System. *Educational Research*, 2019(8), 12-120.
- Li, Z., & Wang, J. (2023). Research on the Digital Transformation of Rural Child Welfare in the Construction of Common Prosperity Demonstration Zone. *Zhejiang Social Sciences*, 2023(3), 98-106.
- Lu, S. Z., & Xu, X. (2020). Current Situation, Problems and Countermeasures of the Construction of Care and Service System for Rural Left-Behind Children in China. *Youth Studies*, 2020(2), 1-10.
- People's Government of Zhejiang Province. *Implementation Plan for Leapfrog High-Quality Development of 26 Mountainous Counties in Zhejiang Province*. (2023). Gazette of the People's Government of Zhejiang Province, 2023.
- Wang, M., & Zhang, F. (2022). Digital Public Welfare: Technological Empowerment and Public Welfare Ecological Innovation. *China NPO Review*, 2022(2), 3-22.
- Zhang, Y. (2022). Research on the Precise Path of Rural Public Services from the Perspective of Digital Governance. *Chinese Public Administration*, 2022(5), 45-52.