Effectiveness in Rural Governance: Influencing Factors and Driving Pathways—Based on 20 Typical Cases of Rural Governance in China

Yu Peng 1,2 *, Xiaobing Peng 1, Xu Li 1, Mingyue Lu 3 and Mingze Yin 1,4

1 School of Public Policy and Administration, Chongqing University, Chongqing 400044, China; pengyu@cqu.edu.cn (Y.P.)
2 Center for Chinese Studies, University of California, Berkeley, CA 94720, USA
3 Gerald R. Ford School of Public Policy, University of Michigan, Ann Arbor, MI 48109, USA
4 Correspondence: ymzskc@cqu.edu.cn

Abstract: Effective rural governance is the foundation for achieving rural revitalization and promoting the modernization of China’s system and governance capacity in the new era. The elucidation of the influencing factors and driving pathways underlying effective rural governance has significant importance in facilitating the advancement of rural revitalization. Drawing upon the Actor-Network Theory (ANT), this study introduces an analytical framework of “human actor dimension—non-human actor dimension”. The study employs the fuzzy-set Qualitative Comparative Analysis (fsQCA) to explore the effective governance pathways within 20 typical cases of rural governance. The study reveals that a cooperative-based collective economy is a necessary condition for effective governance, while possessing a resource advantage is a core condition. Villager autonomy, local culture, and new technology are marginal conditions for effective governance, while the absence of elite participation fails to promote effective governance. The combination of human variables and resource compacts gives rise to “human actor-resource compacts” and “non-human actor-resource compacts”. The study further elaborates on the efficacious model of rural governance through three multifactor driving pathways: “human actor-non-human actor resource sparse linkage”. The research emphasizes the importance of fortifying rural governance and revitalization through the cultivation of relationships, enhancing government management systems, embracing technological innovation, supporting community economies, and advocating mechanisms that empower rural elites and talent.

Keywords: effective rural governance; influencing factor; driving pathways; fuzzy-set qualitative comparative analysis

1. Introduction

Strong leadership is essential in reviving rural areas, emphasizing the importance of rural governance [1]. Villages exhibit a diversity of resources and social structures due to uneven socioeconomic development [2]. Due to the diversity and complexity of the rural areas, a standardized approach to governance can not be applied uniformly across all regions in China [3]. Therefore, exploring the path to effective governance grouping in villages is a key factor in achieving successful rural governance-revitalization and represents a major challenge [4]. Good governance necessitates the consideration of variations in influential factors and the integration of participatory elements with guiding pathways. Effective governance hinges upon how participation is enabled and procedures are managed, necessitating an understanding of the intricate interplay between social practice and theory, as well as the state and rural society [5]. By exploring these interactions, we can enhance our comprehension of the Chinese framework of rural governance, thereby contributing to the cause of rural revitalization.
Rural governance efficacy focuses on two primary dimensions. Firstly, it recognizes the significance of the existing governance system, such as the responsiveness of the state to the needs of farmers and grassroots governance facilitated by the autonomy of villagers. It emphasizes the value of strong leadership, participation from multiple grassroots party organizations, and in-depth analysis at the institutional and methodological levels. Secondly, rural governance efficacy aims to enhance the integration of moral authority, autonomy, and the rule of law in rural governance. This objective is achieved by constructing a new rural governance system and outlining a pathway to successful governance [6]. Given the complex rural environment with a variety of stakeholders, the governance pathways of different grouping models warrant further exploration. The attainment of effective rural governance necessitates multiple avenues. This highlights the need for the creation and implementation of an efficient set of rural governance pathways in rural China.

This study develops a “human actor–nonhuman actor” governance concept using Actor-Network Theory (ANT) and employs the first batch of national rural administrations issued by the Ministry of Agriculture and Rural Affairs and the National Development and Reform Commission as research samples [7]. Employing fuzzy-set Qualitative Comparative Analysis (fsQCA), the study explores the complexity of rural governance, facilitating a deeper understanding of the influencing factors and driving pathways of effective governance, thereby promoting a comprehensive implementation of the rural revitalization strategy.

This paper comprises eight sections. In Section 2, we present a literature review of the current state of research and topical issues in effective rural governance, using the keywords ‘human actors’ and ‘non-human actors’. In Section 3, we conceptually analyze the dimensions of human actors, non-human actors, and effective rural governance based on actor network theory, and build a theoretical framework. In Section 4, we describe the research methodology (Section 4.1), identify the data sources (Section 4.2), and assign variables (Section 4.3), as well as construct a Truth Table (Section 4.4). In Section 5, we conduct a fuzzy-set qualitative comparison for necessary and sufficient analysis, and derive the driving pathways to promote effective rural governance, which are discussed in Section 6. Section 7 summarizes the main points of the article, while Section 8 discusses the limitations and perspectives of the study.

2. Literature Review

With rural revitalization being widely acknowledged, scholars have extensively explored the elements and mechanisms that promote effective governance. The existing studies primarily focus on stimulating the intrinsic motivation of the participation of villagers, fostering connections between rural governance elites and the rural society, establishing innovative models of rural collective economies, cultivating sustainable “localized” rural lifestyles and cultures, strengthening the integration of rural industries and new technologies, and achieving the innovation of rural governance frameworks [8].

The key priority of rural governance lies in ensuring active participation and engagement of the people. Through the application of participatory rural development, successful interactions among key governance actors can foster endogenous activation based on local networks, mobilizing the self-governance of villagers, and empowering farmers to make decisions [9]. A key role in rural areas today is played by elite participation, guiding the path towards sustainable development by actively engaging farmers. Rural organizations play an important role in establishing local industries and promoting rural development. Research indicates that establishing village self-governance organizations focused on rural social development can encourage grassroots participation and consolidate local village organizations. This kind of village organization integrates local and external resources while connecting villagers, rural elites, and society [10]. Hu (2010) emphasizes the importance of effective internal governance that aligns with rural characteristics. This involves actively involving rural elites, leveraging local strengths, and harnessing market forces to bridge the rural–urban divide [11]. Emerging rural authorities, such as rural talents, participate
in rural governance and hold regular village representative meetings to redefine village governance and promote rural development.

However, Collective Economics plays an important role by generating and distributing value along the rural chain, thereby increasing the income of farmers. Triste (2018) suggests transforming small farmers into family farms, promoting rural collective economies across administrative regions, and exploring the transition of leading agricultural enterprises into new rural collaborative economies [12]. Currently, the Collective Economics primarily consists of rural enterprises, rural industrial cooperatives, and other groups that leverage rural resources.

Furthermore, to achieve harmonious and synergistic development between people and resources in rural areas, it is crucial to prioritize the preservation and promotion of rural life and culture. The current study suggests the necessity to adapt urban planning policies to facilitate Resource Advantage. This entails guiding the potential growth of rural collective economic headquarters and encouraging the active participation of farmers in rural and agricultural industrial chains. The integration of agriculture, rural areas, and farmers through the cross-border movement of production factors is essential for achieving Resource Advantage, leading to increased agricultural production, increased incomes for farmers, and enhanced rural prosperity [13,14]. In addition to its inherent resource advantages, rural culture assumes a pivotal role in facilitating the communication between the external world and rural areas.

Traditional institutional and cultural capital-rich regions are more likely to use local culture to solve challenges [15]. Leeuwis (2013) proposes that rural ethics plays a critical role in establishing communication between rural areas and the external world. By facilitating the exchange between rural culture and external influences, rural development can become more dynamic and contribute to the accelerated growth of rural globalization [16]. It is critical to emphasize formal institutional and cultural capital that supports rural governance, along with fully utilizing ethical, moral, and local government resources in agricultural cultures [17]. There is currently an increasing trend in harnessing big data and blockchain technology to drive cultural innovation industries, stimulate resource conservation, and facilitate the dissemination of rural culture [18]. Attracting talent back to the rural areas and applying new information and technology to address practical rural governance and revitalization issues forms a virtuous cycle of governance efficiency.

While effective governance has been a continuous subject of study, there is still potential for improvement. Firstly, the rural revitalization strategy must consider long-term management, a key component that has received little attention. Secondly, an “idealized” perspective of good governance, focusing on the village or external influences, implying that more research is required to identify key success factors and supportive conditions. Thirdly, while some researchers employ comparative single-case analysis, their studies are limited to cross-sectional comparisons, missing a qualitative comparative analysis of rural governance [19].

3. Theoretical Framework

The Actor-Network Theory (ANT) is a theoretical framework developed by sociologists such as Bruno Latour, Michel Callon, and John Law. The theory views scientific and technological practices as dynamic processes that are shaped by the interconnections and mutual construction of heterogeneous elements. It highlights the significance of interactions and relationships between entities and illustrates the process of network formation by tracing the actions of actors.

When studying sociality and social forces, ANT does not focus on the overall picture but rather on the localized, direct maps of connections between entities [20]. This approach differs from the definition of the internet or social networks. In this theory, the term “network” refers to the framing and generalization of interactions and relationships between actors through various methods, resulting in the formation of a localized, pragmatic, and centralized system [21]. The term also represents the transformation, translation, or
reinterpretation of relationships and interactions between entities. ANT solely concentrates on the construction and interaction of individual networks and does not address the content between networks. Consequently, it primarily deals with local generalizations, leading to the concept of “local totality” or “total localization”.

ANT indicates that there is no inherent distinction between human and non-human roles or participation in social networks [22]. It considers all actors, whether dynamic or static, as contributors to the network, and categorizes them into core and supporting roles. Core actors primarily contribute to the cohesion of the network. In the context of rural governance, villages are relational entities within this actor network, formed by individuals and the relationships surrounding them. The interaction between human and non-human actors in the rural environment serves as the foundation for rural governance. Essentially, rural governance is an ongoing cycle of involvement by key actors within and outside the community. This study integrates existing literature and proposes a model based on ANT for the analysis of rural governance, taking into account both human and non-human actors.

3.1. Human Actor Dimension

Human actors based on the autonomy of rural people, elite participation and the existence of a cooperative economy, are the effective managers of key actors. Villagers and village-level leaders are the primary subjects of rural governance in China, which still grapples with the effects of a dualistic urban–rural system. Wang et al. (2018) emphasized grassroots involvement and inter-group cooperation in rural governance to overcome this dualism [23].

Villagers, who are grassroots-level subjects, are responsible for their administration, education, and welfare. They should foster rural self-governance, tap into villages’ endogenous development potential from the bottom up, and promote effective governance [24]. Local elites and rural cooperative societies are integral to grassroots leadership. As rural autonomy reforms progress, rural leaders gain easier access to resources, the paths for grassroots people to become elites multiply, and the significance of rural elites changes substantially.

With the transformation of the rural governance structure, management has shifted towards an economically oriented collaborative economy. Mobilizing villagers for self-governance, establishing professional farmers’ cooperatives, and fostering a collaborative economy in production and life can lower governance costs and facilitate rural governance reforms [25].

3.2. Non-Human Actor Dimension

Non-human actors constitute the material basis of rural governance [26], which includes Indigenous values, access to natural resources, and innovative technology. These non-human agents, as they modify knowledge and circumstances, mediate a collective consensus, facilitating shared comprehension among multiple participants. In rural contexts, non-human actors play crucial ecological, productive, and societal roles.

Cultural expressions in rural areas reflect the history of the region, adapt to changing times, and highlight the unique human and environmental characteristics of the region. Forming a rural cultural order based on rural local culture is beneficial for modern rural governance [27].

Competitive resource advantages fuel the ‘network’. These advantages, including political, economic, and cultural resources, along with innate market and cultural knowledge, are transmitted through the ‘network’s translation function. External investment capital refers to the inflow of transfer payments and social capital, which encourages investment diversification for rural governance, revitalizes the rural economy, and serves as a reference for rural revitalization.

The advent of big data and cutting-edge technologies has revolutionized rural governance. These new technologies, with their diversity, network openness, cross-cutting governance, and public participation, have steered rural governance towards networking
and enhancement. Once a community’s culture and resources are activated, new technologies can be efficiently integrated, facilitating expression translation within the network.

3.3. Governance Effectiveness

This paper presents a comprehensive analysis framework based on an ANT perspective to examine the effects of governance in the context of rural revitalization. It takes into account the holistic process of rural rehabilitation and systematically integrates previous research findings. The framework incorporates practical measures suggested by normative studies and incorporates case experiences from single case studies. By adopting an actor-network viewpoint, the study establishes an integrated framework and pathways for effective governance in rural areas. This approach allows for a more nuanced understanding of the complex interactions and dynamics involved in rural revitalization efforts.

Effective rural governance is a direct reflection of certain governance approaches and is measured by how well they achieve their stated goals and objectives [28] in rural areas. In terms of what it includes, the implementation of rural governance has two parts: actual indicators from media stories and possible indicators from other rural areas that can be used as models. Maximum results, ideal outcomes, or optimum public services may be reflected. This research presents an analytical framework for the governance effectiveness, as indicated in Figure 1, based on the foregoing discussion.

![Figure 1. Analytical framework for governance effectiveness. Figure source: Author-created.](image)

4. Research Design

4.1. Research Method

Qualitative Comparative Analysis (QCA), leveraging Boolean algebra and fuzzy sets, discerns similarities and differences between datasets. Unlike causal inference techniques such as randomized controlled trials or regression analysis, QCA is a hybrid research approach blending qualitative and quantitative methodologies. It underscores the complex nature of social science issues, exploring the interplay between antecedent and resultant conditions. This study aims to examine the causes and pathways affecting governance effectiveness. Although the significance of influencing variables and driving directions in successful governance have been probed previously, they have not been explicitly identified in earlier normative studies.

Applying QCA to explore the causal components and perform causal pathway analyses of governance effectiveness offers several advantages. Given the absence of a consistent quantitative database on governance efficacy, a strictly statistical quantitative analysis is
not feasible. Simultaneously, multi-case QCA provides a more comprehensive explanation of study outcomes than single-case studies, which tend to be more specific. It also aids in determining the most critical factors and how they interact. QCA, by illustrating the significance and combination paths of various condition variables in the governance effects process, addresses the gaps in prior research.

In this study, we utilize fuzzy-set Qualitative Comparative Analysis (fsQCA) to assign values to individual variables. The fundamental steps involve determining the research question and analytical framework, selecting the case set, identifying the outcome and dependent variables, creating a truth table, conducting a single-element necessity analysis, performing a combination analysis, and discussing the findings. We have chosen fsQCA 3.0 software for this purpose.

4.2. Data Source

In June 2019, the Ministry of Agriculture and Rural Affairs and the National Development and Reform Commission published 20 representative cases of national rural governance, as shown in Table 1. These cases were chosen based on expert jury selection, practical research, verification, and summary, which reflect how rural issues impact rural development. The precondition of “strengthening rural grassroots governance” as a means to achieve rural revitalization was first advocated in Document No. 1 issued by the Central Government in 2023 [29]. These cases now serve as crucial evidence for evaluating the administrative efficiency of China.

<table>
<thead>
<tr>
<th>Serial Number</th>
<th>Case Name</th>
<th>Serial Number</th>
<th>Case Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Shunyi District, Beijing</td>
<td>11</td>
<td>Yujiang District, Yingtan City, Jiangxi Province</td>
</tr>
<tr>
<td>2</td>
<td>Baodi District, Tianjin</td>
<td>12</td>
<td>Yishui County, Linyi City, Shandong Province</td>
</tr>
<tr>
<td>3</td>
<td>Handan City, Hebei Province, Feixiang District</td>
<td>13</td>
<td>Daye City, Huangshi City, Hubei Province</td>
</tr>
<tr>
<td>4</td>
<td>Baoshan District, Shanghai</td>
<td>14</td>
<td>Zigui County, Yichang City, Hubei Province</td>
</tr>
<tr>
<td>5</td>
<td>Guotang Village, Caotang Town, Jinshan District, Shanghai</td>
<td>15</td>
<td>Yaoxiqiao Village, Jiqiong Town, Xinhua County, Hunan Province</td>
</tr>
<tr>
<td>6</td>
<td>Tongxiang City, Jiaxing City, Zhejiang</td>
<td>16</td>
<td>Huizhou City, Guangdong Province</td>
</tr>
<tr>
<td>7</td>
<td>Zhejiang Province</td>
<td>17</td>
<td>Nantai District, Foshan City, Guangdong Province</td>
</tr>
<tr>
<td>8</td>
<td>Xiangshan County, Ningbo City, Zhejiang Province</td>
<td>18</td>
<td>War Flag Village, Tangchang Street, Pudu District, Chengdu, Sichuan Province</td>
</tr>
<tr>
<td>9</td>
<td>Chuzhou City, Anhui Province, Tianchang City</td>
<td>19</td>
<td>Hanyin County, Ankang City, Shaanxi Province</td>
</tr>
<tr>
<td>10</td>
<td>Luoxi Town, Luojiajiang District, Quanzhou City, Fujian Province</td>
<td>20</td>
<td>Wuzhong Hongsibao District, Ningxia Hui Autonomous Region</td>
</tr>
</tbody>
</table>

Data sources: Ministry of Agriculture and Rural Affairs, China.

4.3. Variable Assignment

The variable allocation process in this study comprises two phases: The first step involves defining the significance and scope of the variables based on the analytical framework. The second step involves coding and validating the variables, rooted in their definitions and dimensions, as found in the case data. Two measures are used as indicators of the progress made so far: (i) Media coverage of the rural governance model, and (ii) Replication of the rural governance model in other regions. Considering the time lag in the effects of governance, this analysis will take into account both the media coverage and village emulation that occurred over a three-year period (June 2019–June 2022). The assigned value is 0 if neither is present, 0.33 if only media coverage exists, 0.67 if there is replication without media coverage, and 1 if both factors are present.
In order to examine the governance situation at the time and identify the grouping pathways that promote effective governance, the search period for the antecedent conditions was set from June 2018 to June 2019. This timeframe allows for a focused analysis of the relevant factors influencing governance during that specific period. The study uses six dependent variables, split into two groups of conditional variables based on two dimensions: human actors and non-human actors. Table 2 shows the numerical codes for what they represent and the extent to which they exist.

Table 2. Variable and assignment settings.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Variable Name</th>
<th>Metrics</th>
<th>Assignment Rules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resulting Variables</td>
<td>Rural Governance Effectiveness</td>
<td>Get media coverage</td>
<td>0 for neither, 0.33 for media coverage but no replication, 0.67 for no media coverage but replication, 1 for both</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Attracting them to follow suit</td>
<td></td>
</tr>
<tr>
<td>Villagers’ Self-governance</td>
<td>Participation in self-government or not</td>
<td>Village officials</td>
<td>0.33 if one of these is met, 0.67 if two of these are met, and 1 if all three are met</td>
</tr>
<tr>
<td></td>
<td></td>
<td>New villagers</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Returning entrepreneurs</td>
<td></td>
</tr>
<tr>
<td>Elite participation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conditional Variables</td>
<td>Collective Economics</td>
<td>Presence or absence</td>
<td>Presence coded 1, absence coded 0</td>
</tr>
<tr>
<td></td>
<td>Systematic rural indigenous culture</td>
<td>Location advantages</td>
<td>with a systematic indigenous village culture coded as 1, otherwise 0</td>
</tr>
<tr>
<td></td>
<td>Foreign investment capital</td>
<td>Industrial integration</td>
<td>With one coded as 0.33, with two coded as 0.67 and all three coded as 1</td>
</tr>
<tr>
<td>Resource Advantages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Technologies</td>
<td></td>
<td>Does it exist</td>
<td>Yes is coded as 1, otherwise coded as 0</td>
</tr>
</tbody>
</table>

4.4. Constructing the Truth Table

The truth table for this study was created using fsQCA 3.0 software, with standard threshold values applied (frequency threshold = 1, consistency threshold = 0.8). The truth table method yielded 25 rows of data, each representing a different combination of conditional variables. After eliminating all logical remainders, we finalized the truth table to be used for a qualitative comparative analysis of factors influencing effective governance.

The basic combinations of conditional variables derived from the simplified truth table are interpreted as determinants of effective governance. Given that no apparent conflicts were observed in the constructed truth table, these combinations are deemed reliable. It is impossible to provide an actual truth table (Table 3) based on the information provided.

Table 3. Truth table.

<table>
<thead>
<tr>
<th>Villagers’ Self-Governance</th>
<th>Elite Participation</th>
<th>Collective Economics</th>
<th>Local Culture</th>
<th>Resource Advantages</th>
<th>New Technologies</th>
<th>Number of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
5. Qualitative Comparative Results and Analysis

5.1. Necessity and Sufficiency Analysis of Single Factors

In accordance with the QCA method, our first step is to examine the necessity or sufficiency of each variable for the outcome variable, focusing on their consistency and coverage. If the consistency of a variable is greater than 0.9, it is typically deemed necessary and is excluded from subsequent sufficiency analyses. If the consistency of a variable falls between 0.8 and 0.9, it is considered a sufficient condition, meaning that this variable can help explain the outcomes. After calculating these values with the software (fsQCA 3.0), the necessary and sufficient single-factor values for effective governance are presented in Table 4.

Table 4. Results of necessity and sufficiency calculations for single factors.

<table>
<thead>
<tr>
<th>Dimensionality</th>
<th>Conditional Variables</th>
<th>Resulting Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Effective Rural Governance Coverage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ineffective Rural Governance Coverage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consistency</td>
</tr>
<tr>
<td>Human Actor Dimension</td>
<td>Villagers’ Self-governance</td>
<td>0.6355</td>
</tr>
<tr>
<td></td>
<td>~Villagers’ Self-governance</td>
<td>0.3644</td>
</tr>
<tr>
<td></td>
<td>Elite Participation</td>
<td>0.3392</td>
</tr>
<tr>
<td></td>
<td>~Elite Participation</td>
<td>0.7956</td>
</tr>
<tr>
<td></td>
<td>Collective Economics</td>
<td>0.9094</td>
</tr>
<tr>
<td></td>
<td>~Collective Economics</td>
<td>0.0905</td>
</tr>
<tr>
<td></td>
<td>Local Culture</td>
<td>0.5905</td>
</tr>
<tr>
<td></td>
<td>~Local Culture</td>
<td>0.4094</td>
</tr>
<tr>
<td>Non-human Actor</td>
<td>Resource Advantage</td>
<td>0.8194</td>
</tr>
<tr>
<td>Dimension</td>
<td>~Resource Advantage</td>
<td>0.3153</td>
</tr>
<tr>
<td></td>
<td>New Technologies</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>~New Technology</td>
<td>0.5</td>
</tr>
</tbody>
</table>

As seen in Table 4, a consistency value greater than 0.9 for the collective economy condition is a necessary condition for effective governance, accounting for 74.16% of the cases. Similarly, a consistency value greater than 0.8 for the perceived resource advantage condition suggests that resource advantage is a sufficient condition for effective governance, explaining 81.83% of the cases. While the remaining condition factors may provide unique insights into improving governance due to their nature and coverage, their consistency values are all below 0.8, so they cannot serve as necessary or sufficient conditions on their own.

Effective leadership often emerges from a combination of various conditions. Thus, the impacts of different combinations of factors on efficient administration are discussed further below.

5.2. Analysis of the Combination of Conditional Variables

Following the operational procedures of the software (fsQCA 3.0), we conducted an analysis of combinations of conditional variables that influence effective governance, focusing on three potential scenarios: complex, parsimonious, and intermediate. The output parameters of the complex scenario are calculated based on the variable settings of the researchers and include all ‘logical remainders’ that warrant further investigation. This makes the complex scenario more comprehensive than the parsimonious and intermediate scenarios, making it a vital choice for our study.

Table 5 presents the five complex configurations that contribute to effective governance. Each column represents a possible configuration, detailing each configuration’s core conditions, peripheral conditions, and associated characteristics such as consistency, raw coverage, and unique coverage. The conditions present in every solution in the complex scenario are referred to as ‘core conditions’, while those appearing in the intermediate solution but not in the complex solution are deemed ‘peripheral conditions’ [30].
Table 5. Configurations of factors affecting effective governance.

<table>
<thead>
<tr>
<th>Dimensional Divisions</th>
<th>Conditional Variables</th>
<th>Sparse Linkage Type</th>
<th>Close-Linked</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>C1</td>
<td>C2</td>
</tr>
<tr>
<td>Human Actor Dimension</td>
<td>Villagers’ self-governance</td>
<td>×</td>
<td>⊗</td>
</tr>
<tr>
<td></td>
<td>Elite participation</td>
<td>⊗</td>
<td>⊗</td>
</tr>
<tr>
<td></td>
<td>Managing collections</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Non-human Actor Dimension</td>
<td>Local culture</td>
<td>⊗</td>
<td>⊗</td>
</tr>
<tr>
<td></td>
<td>Resource advantages</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>New technologies</td>
<td>⊗</td>
<td>⊗</td>
</tr>
<tr>
<td>Consistency</td>
<td>0.8589</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Original coverage</td>
<td>0.1369</td>
<td>0.0912</td>
<td>0.0456</td>
</tr>
<tr>
<td>Net coverage</td>
<td>0.1369</td>
<td>0.0912</td>
<td>0.0456</td>
</tr>
</tbody>
</table>

Consistency of overall solution = 0.935453
Overall solution coverage = 0.661444
Case frequency threshold = 1 Consistency threshold = 0.8

●, • indicate that the condition variable is present, i.e., the condition variable has a high value; ⊗, ⊗ indicate that the condition variable is missing; • ⊗ indicate a ‘core condition’; ●, ⊗ indicate a ‘marginal condition’; and spaces indicate that the condition variable is not significant for the outcome variable. Data source: Authors’ calculations based on fsQCA 3.0 software.

The data in Table 5 indicate that the overall consistency of the configurations in the complex scenario is 0.9354, and the lowest individual configuration consistency is 0.8589. Both figures exceed the critical value of 0.75, demonstrating that the six configurations exhibit robust properties that can provide a scientific explanation of the elements of effective governance. With an overall coverage of 0.6614, they can account for approximately 66.14% of rural governance cases, indicating their high explanatory power.

Configuration 1: ~Villager Autonomy * ~Elite Participation * Collective Economy *
Local Culture * ~New Technology

This path suggests the establishment of economic collectives centered on rural cooperatives, the full exploitation of the advantages of vernacular culture, the support of new technologies, and the full participation of villagers in self-government and elite involvement. These can achieve effective governance.

Configuration 2: ~Villager Autonomy * ~Elite Participation * Collective Economy *
Local Culture * Resource Advantage

All of these can lead to effective governance, such as establishing cooperative-centered management collectives. Additionally, rural resources promote industrial integration, attracting external investment capital for adequate control.

Configuration 3: Villager Autonomy * ~Elite Participation * ~Collective Economy *
Local Culture * Resource Advantage * ~New Technology

This path indicates that when villagers participate in rural governance, the effective use of rural local cultural foundations and the resource advantages of the rural location, industrial integration, and external investment can help improve effective governance.

Configuration 4: Villager Autonomy * ~Elite Participation * Collective Economy *
Resource Advantage * New Technology

These can lead to effective governance, such as establishing cooperative-centered management collectives. Additionally, rural resources promote industrial integration, attracting external investment capital for adequate control.

Configuration 5: Villager Autonomy * Elite Participation * Collective Economy *
~Local Culture * Resource Advantage * ~New Technology

This path implies that promoting a diverse range of rural governance actors, including villagers and elites, enhancing the management of collective economic entities, and concentrating on developing rural resource advantages can improve effective governance.
Configuration 6: ~Villager Autonomy ∗ Elite Participation ∗ Collective Economy ∗ Local Culture ∗ Resource Advantage ∗ New Technology

This path suggests that strengthening rural governance can be achieved through the involvement of elites, the creation of collective economic entities, the strengthening of local cultural development, the effective use of resource advantages, and the adoption of new technologies.

5.3. Robustness Test

After adjusting the consistency level threshold from 0.8 to 0.9 and re-running the configuration analysis, the frequency remained the same. This indicates that the findings of the study mostly stayed the same after adjusting the consistency level threshold, and that the research was reliable. The six configurations can be summarized into two main paths: “sparse link type” and “tight link type”.

5.4. Drive Path

5.4.1. Sparse Link Type

The “sparse linkage type” paths include configurations 1, 2, and 3. The core conditions for the “sparse linkage type” paths are the synergistic economy in the human-actor dimension, village autonomy based on local culture, and local cultural and resource advantages in the non-human-actor extent. It suggests that the main drivers of effective governance are efficient collective economic entities, such as rural professional cooperatives and village unions based on local culture. It indirectly reveals that a collective centered on economic dynamism and cultural development can better facilitate the connection of rural network nodes and the construction of a rural governance system. However, the constraint to the growth of effective governance remains the participation of villagers, rural elites, and other human resources in governance. They are integrating local culture and activating resource advantages toward effective rural governance.

5.4.2. Closely Linked Types

The “close linkage” pathway includes configurations 4, 5, and 6, all with multiple core conditions in the human and non-human actor dimensions (outcome = village autonomy ∗ synergistic economy ∗ resource advantage ∗ new technology, village autonomy ∗ elite participation ∗ synergistic economy ∗ resource advantage, elite participation ∗ synergistic economy ∗ local culture ∗ resource advantage ∗ new technology). The key to promoting effective governance lies in jointly activating the various elements of the rural network and interconnecting the different nodes to promote rural development and achieve effective governance.

i. The “closely linked non-human actor resource type” includes configurations 4 and 6 (outcome = village autonomy ∗ synergistic economy ∗ resource advantage ∗ new technology, elite participation ∗ synergistic economy ∗ local culture ∗ resource advantage ∗ new technology). This pathway suggests that the resource advantage of rural areas and the efficiency of other technologies play an essential role in effective governance. The cases this pathway covers are “hard resources” in the countryside, i.e., physical resources that go hand in hand with developing rural infrastructure. This suggests the activation of rustic material resources such as rural location advantages and the basis for multi-industry development, the introduction of foreign investment, and the involvement of governance actors familiar with rural development, such as “consolidating and improving the basic rural management system”, “strengthening new types of agricultural business entities”, “developing a new type of rural collective economy”, and “developing a new type of rural economy”. The actual practice of rural cases, such as “developing a new type of rural collective economy”, will achieve effective governance.

ii. The “closely linked human actor resources” path includes configuration 5 (outcome = village autonomy ∗ elite participation ∗ synergistic economy ∗ resource advantages), which
is “soft resources”, i.e., villagers, elites, and other human resources. It indicates that such people in rural areas contribute to rural governance, discovering rural strengths, and enhancing the linkages between rural human and non-human resources, such as “cultivating new types of professional farmers”, “strengthening the construction of a team of rural professionals”, and “encouraging social talents to join rural construction”, “encouraging social talents to join rural construction”, etc., thus realizing the effectiveness of rural governance.

6. Discussion

6.1. Activating Human Actors in Rural Effective Governance

Rural governance is a complex process that requires the cooperation and coordination of multiple stakeholders, including government officials, farmers, social organizations, and village elites. Human factors, such as attitudes, awareness, behaviors, and interactions, play a significant role in this process. Table 5 demonstrates that the collective economy is a fundamental element of effective rural governance, emphasizing the importance of its healthy development. A robust rural collective economy ensures a stable economic environment and encourages social participation, providing strong support for effective rural governance. Strengthening the establishment of rural grassroots organizations promotes the efficient functioning of the rural collective economy. By establishing well-functioning rural social organizations and farmers’ cooperatives, rural resources can be effectively integrated, thereby enhancing the competitiveness and sustainable development of the collective economy [31].

The absence of rural elites poses challenges to the effectiveness of rural governance. Due to long-standing economic disparities and limited educational resources in rural areas, many talented individuals have opted to migrate to urban areas for better employment and development opportunities, resulting in a significant brain drain from rural communities. The lack of rural elites hampers the quality of talent and decision-making capacity within rural governance, hindering its effectiveness and sustainable development. Scholars have increasingly recognized this issue, and research is now focused on cultivating and attracting rural elites to enhance rural governance [32]. The government has also intensified efforts to nurture and attract rural talents by providing training programs and establishing incentive mechanisms, aiming to create platforms and opportunities for rural elites to contribute to and enhance rural governance capacity.

The autonomy of villagers is equally vital for effective rural governance. As the main beneficiaries and key stakeholders in rural governance, the active participation and awareness of farmers are crucial. Their involvement enhances the democratic nature, fairness, and viability of governance [33]. Establishing the agency of farmers and enhancing their capacity for participation effectively promotes the democratization and consultation of rural governance, thereby facilitating sustainable development.

In summary, activating effective human actors in rural governance requires the collaboration and coordination of various stakeholders. Developing a healthy collective economy, addressing the lack of rural elites, and empowering the autonomy of villagers are all essential elements for effective rural governance. By prioritizing these aspects, rural communities can foster sustainable development, inclusive decision-making, and improved quality of life.

6.2. Enhancing Non-Human Actors

Rural resource advantages serve as the foundation and conditions for the development of rural governance. The effective utilization of these resource advantages requires proper coordination and management within the framework of rural governance. Emphasizing the integration and allocation of resources, as well as establishing a rational resource management mechanism and policy system, should be the focal points of rural governance. The government plays a crucial role in guiding and regulating rural governance, ensuring
the rational use and protection of resources through the formulation of plans, policies, and regulations [34].

Currently, the progress of new technology development in rural areas is relatively slow, hindered by several challenges and constraints. While new technologies are widely adopted and promoted in urban areas, their diffusion and application in rural areas encounter various obstacles. The development of infrastructure and information and communication networks in rural areas lags behind, resulting in issues such as inadequate network coverage and slow internet speeds. This hampers rural residents from fully enjoying the convenience and opportunities brought on by new technologies and limits the application of new technologies in rural governance. Strengthening rural infrastructure development is crucial to improve network coverage, increase internet speeds, and bridge the digital divide. Additionally, the integration of rural culture and rural governance faces difficulties and challenges. On one hand, the emphasis on economic benefits and material development in rural governance has overshadowed the preservation and transmission of rural culture [35]. On the other hand, the weakening and loss of rural cultural traditions have hindered the active role of rural culture in rural governance. It is important to advocate for the integration of traditional rural culture with contemporary industries to infuse new vitality into rural economic development.

6.3. Choosing the Driving Pathways for Effective Rural Governance

The effectiveness of rural governance is influenced by a combination of various factors, and there are different options for promoting effective rural governance through the interaction of human and non-human actors. This study reveals that multiple factors contribute to effective rural governance in different ways. Local governments do not need to incorporate all elements under different resource constraints, but can strategically mobilize rural resources based on their own resource endowments to achieve optimal outcomes.

The closely linked human actor resources: The autonomy of villagers, elite participation, effective management, and resource advantages are interdependent and collectively shape a successful village governance model. By fostering elite participation, establishing effective management mechanisms, promoting villager autonomy, and leveraging the resource advantages of the village, sustainable village development can be achieved, enhancing the well-being and quality of life for village residents.

The closely linked non-human actor resource type: The effectiveness of rural governance can be enhanced through the utilization of both the inherent resource advantages of the villages and the application of new technologies. The unique resource advantages of rural areas, coupled with the integration of new technologies, contribute to the modernization, innovation, and sustainable development of rural governance. To achieve effective governance, it is important to carefully manage rural resources, strengthen their protection, integration, and allocation, and promote their efficient use and synergistic development. Additionally, by establishing smart villages, promoting e-government initiatives, and implementing digital agriculture, information sharing, data analysis, and decision support capabilities can be enhanced. Villages with favorable physical conditions can improve their governance capacity and level by fully leveraging their resource advantages and adopting new technologies.

The sparse linkage type: In these pathways, the management structure and cultural factors play a prominent role, reflecting a dynamic, economically, and culturally oriented development framework. The connection between different network nodes in rural areas facilitates the construction of a rural governance system. By enabling smooth information sharing, optimal resource allocation, collaborative development, broad participation of stakeholders, and democratic governance, villages can enhance the effectiveness and sustainability of rural governance.
7. Conclusions

This study aims to address the imperative for sustainable development in rural areas by examining the crucial aspect of effective governance. By employing a theoretical framework based on ANT and employing fsQCA, the study investigates the impact of human and non-human factors on effective rural governance. The findings shed light on the influencing factors and driving pathways that contribute to rural effective governance. The key findings of this study are as follows:

(i) Cooperative-based collective economics as a necessary condition for effective governance. Cooperative-based collective economics are vital for effective governance in rural areas. It emphasizes the importance of an objective economic entity that is firmly rooted in local conditions. By operating through cooperative groups composed of individuals, rural residents can actively engage in economic decision-making, resource management, and community planning. This participatory approach facilitates democratic decision-making, decentralization, and ensures the adequate representation and defense of the interests of rural residents, thereby enhancing community cohesiveness.

(ii) Resource advantage as a core condition. Possessing a resource advantage plays a significant role in rural effective governance. Rural areas must develop a modern industrial system that revolves around their available resources. Integration and value addition of these resources are crucial for promoting rural development. The coordination of human capital, geographical advantages, and available resources should be effectively managed to facilitate holistic rural development.

(iii) Villager autonomy, local culture, and new technologies as marginal conditions. The importance of village autonomy, local culture, and new technologies in effective governance is relatively small. However, it emphasizes that these factors still hold indispensable roles in achieving effective rural governance. Attention should be given to preserving and promoting local culture, empowering villagers with decision-making autonomy, and incorporating new technologies to enhance governance processes.

(iv) Elite participation as a key element. The study underscores the necessity of elite participation for effective rural governance. The limited rate of elite participation poses a hindrance to achieving effective governance. By leveraging their expertise, leadership, and social influence, the involvement of elites introduces new dynamics and opportunities for rural community development.

(v) Identification of configurations of effective governance. Through the examination of various conditional factors, the study identifies six configurations of effective governance. It reveals three multi-factor combinations of driving pathways: “human actor-resource tight linkages”, “non-human actor-resource tight linkages”, and “human actor–non-human actor resource sparse linkages”. These pathways highlight the critical nature of the interconnectedness of elements within the governance process. By employing scientifically informed policy formulation, planning, and management, the rational allocation and equitable distribution of human and non-human resources can be promoted, ensuring effective equity and sustainability in rural governance. Attention should be given to the unique needs of rural areas, and targeted policies should be formulated to promote the realization of rural revitalization.

In conclusion, this study contributes to the understanding of effective rural governance by examining the role of a cooperative-based collective economy, resource advantage, villager autonomy, local culture, new technologies, and elite participation. By comprehensively analyzing these factors, the study identifies key conditions and driving pathways that facilitate effective governance in rural areas, thereby providing valuable insights for policy formulation and decision-making processes aimed at achieving sustainable rural development.
8. Limitations and Perspectives

However, there are certain limitations to the research presented in this paper. Firstly, due to the limited number of conditional variables considered in this study, it fails to reveal all the influencing factors and driving pathways of effective governance. Secondly, in terms of research methodology, the QCA approach necessitates the conversion of qualitative textual content into measurable quantitative variables. This data calibration process heavily relies on the understanding of researchers of existing research and cases, making it somewhat subjective and requiring further validation. Therefore, future studies can be conducted to address these limitations and explore the following areas.

Firstly, the number of case samples should be expanded to include other influencing factors of governance effectiveness. Additionally, the measurement dimensions of the indicators for effective governance influencing factors can be increased and refined to enhance the scientific rigor and rationality of the analysis results. This will enrich the understanding of the various pathways and provide a stronger empirical basis through multi-case studies on governance effectiveness. Secondly, while drawing general conclusions from the multi-case studies, it is important to focus on the specificities of individual cases. In-depth and comprehensive studies on individual cases of effective governance practices can be conducted to further validate the research findings and provide detailed insights. By addressing these areas of improvement, future research can overcome the limitations of this study, broaden the scope of analysis, and enhance the validity and applicability of the findings.

Author Contributions: Conceptualization, Y.P. and M.Y.; methodology, Y.P.; software, Y.P.; validation, X.L., X.P. and M.Y.; formal analysis, Y.P.; investigation, M.L.; resources, X.L.; data curation, M.Y.; writing—original draft preparation, Y.P.; writing—review and editing, M.Y.; visualization, M.L.; supervision, X.P.; project administration, X.P.; funding acquisition, X.P. and Y.P. All authors have read and agreed to the published version of the manuscript.

Funding: National Social Science Foundation of China (NSSF) Emergency Management System Construction Research Special Project: Research on the “Three Social Linkages” Mechanism for Social Forces to Participate in Emergency Management of Major Public Health Emergencies (20VYJ031); Phase Achievement of Chongqing University Central University Basic Scientific Research Business Fund Scientific Research Special Project (2018CDXYGG0054); Graduate Scientific Research and Innovation Foundation of Chongqing (CYS20058). The funding agency had no role in the study design, data collection and analysis, decision to publish, or preparation of the manuscript. Any opinions, findings, and conclusions expressed in this publication are those of the authors and do not necessarily reflect the views of the funding agency.

Data Availability Statement: Data are available on request due to privacy/ethical restrictions. The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Conflicts of Interest: The authors declare that they have no competing interest, financial or non-financial, that could influence the design, execution, or interpretation of the research presented in this manuscript. The authors confirm that the research was conducted in the absence of any personal, professional, or financial relationships that could be construed as potential conflict of interest.

References


