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Configuring Pathways to Successful Rural Development: A Fuzzy-Set Qualitative Comparative Analysis of Korea's Project in Kyrgyzstan

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Abstract

This study applies Fuzzy-Set Qualitative Comparative Analysis (fsQCA) to identify key determinants influencing the outcomes of Korea's Integrated Rural Community Support Project in Kyrgyzstan. Conducted from 2021 to 2025 in 30 villages across the Osh and Batken regions, the analysis focuses on exploring the complex interactions of various factors—including community participation, infrastructure improvement, women's participation, income generation activities, and agricultural training—that affect the success of rural development initiatives. Utilizing fsQCA offers distinct methodological advantages, allowing for the assessment of conditions through their combinations rather than isolated effects, thus providing nuanced insights that traditional statistical methods might overlook. Results highlight those combinations involving high levels of community participation and infrastructure enhancement, particularly when integrated with women's participation or agricultural training, are significantly linked to successful project outcomes. The findings suggest that rural development interventions are most effective when adopting multidimensional, integrated approaches rather than single-factor solutions. Consequently, this study provides critical theoretical and practical implications for policymakers and development practitioners, advocating for comprehensive strategies tailored to local contexts. Future research could extend this analytical approach to other regions and incorporate additional socio-cultural, economic, and political dimensions, enhancing the broader applicability and impact of rural development projects internationally.

Keywords: Rural Development Project, Fsqca, Kyrgyzstan ODA Project.

Introduction

Research Background and Rationale

In the field of international development cooperation, rural development has consistently been recognized as a critical area for poverty alleviation and sustainable development. Central Asia, in particular, continues to attract international attention and support due to its unique geographical and economic characteristics. Among these nations, Kyrgyzstan faces significant development challenges, particularly in its southern regions, which remain economically underdeveloped and have concentrated poverty populations. Consequently, effective rural community development strategies are urgently needed. In response, the Korea International Cooperation Agency (KOICA) and Good Neighbors International (GNI) have initiated the "Integrated Rural Community Support Project" in 30 villages located in Osh and Batken regions of southern Kyrgyzstan, running from September 2021 through December 2025, for a total duration of four years and four months.

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This project aims to enhance the socioeconomic environment and capacities of vulnerable groups, promote women's rights, increase sustainable income, and improve the Kyrgyz government's rural development implementation capabilities, thereby fostering inclusive and sustainable rural development. However, discrepancies between set goals and actual outcomes frequently occur in international development cooperation projects, particularly in rural development initiatives characterized by complex interactions among multiple factors. Thus, systematic research is required to analyze and evaluate the effects of combinations of various factors on project outcomes.

This study employs Fuzzy-Set Qualitative Comparative Analysis (fsQCA) to identify the crucial combinations of conditions that significantly influence the outcomes of the integrated rural community development project, based on mid-term evaluation results and performance data from the 30 villages. Through this approach, the research aims to provide theoretical and practical insights to enhance the efficiency and effectiveness of rural development projects.

Research Objectives and Questions

The purpose of this study is to identify key determinants of outcomes in Korea's integrated rural community support project implemented in southern Kyrgyzstan using fsQCA, and to propose effective implementation strategies and improvements. The specific research questions are:

Firstly, what are the key factors determining project outcomes (success/failure) in the integrated rural community support project in Kyrgyzstan? Secondly, under what combination of conditions do these factors most effectively influence project outcomes? Thirdly, how can variations in outcomes across villages be explained by combinations and interactions of different variables?

Research Scope and Methodology

This research focuses on analyzing the integrated rural community support project conducted by KOICA and Good Neighbors International in 30 villages in Osh and Batken regions of southern Kyrgyzstan. Data collected during the project, including village-specific outcomes, levels of community participation, infrastructure improvements, women's participation rates, and income generation, are used as key variables for analysis. Fuzzy-Set Qualitative Comparative Analysis (fsQCA) is adopted as the primary analytical method to systematically explore complex causal relationships and the effectiveness of different combinations of conditions.

Structure of the Paper

This paper consists of six chapters. Chapter 1 introduces the research background, rationale, objectives, and questions, and provides an overview of the paper. Chapter 2 reviews the theoretical background related to rural community development and fsQCA methodology. Chapter 3 details research design and analytical methods. Chapter 4 presents specific analytical results. Chapter 5 discusses theoretical and practical implications derived from the findings. Finally, Chapter 6 summarizes the study, addresses its limitations, and suggests directions for future research.

Theoretical Background

Rural Community Development and Performance Evaluation

Rural community development refers to an integrated approach aimed at enhancing the economic, social, and environmental development of local communities comprehensively. In

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international development cooperation, rural community development specifically targets multidimensional objectives such as poverty alleviation, capacity building for local residents, income increase, and sustainable regional development. Evaluating the performance of such projects requires a range of indicators, including economic outcomes (income growth, participation in economic activities), social outcomes (community participation, promotion of gender equality), and environmental outcomes (infrastructure improvement, sustainable resource management) (Hermans et al., 2017; Woolcock & Narayan, 2000). Moreover, active participation by local residents and customized approaches aligned with regional characteristics are essential for the success of rural development projects (Korten, 1980; Uphoff, Esman, & Krishna, 1998; Bebbington et al., 2006; Flora & Flora, 2013; Mansuri & Rao, 2013). This study incorporates the complexity of performance evaluation by reflecting the multi-faceted nature of rural development projects.

Concept and Characteristics of Fuzzy-Set Qualitative Comparative Analysis(fsQCA)

Fuzzy-Set Qualitative Comparative Analysis (fsQCA) is recognized as a suitable methodology for analyzing complex social phenomena by integrating qualitative and quantitative research methods (Ragin, 2008). fsQCA has the advantage of identifying causal relationships through a case-oriented approach (Cilliers & Nagel, 2018; Pattyn et al., 2019)F. Specifically, it can analyze the impact of combinations of variables and multiple causal pathways on outcomes. Key features of fsQCA include: first, it enables the identification of complex relationships among variables through a case-oriented analysis. Second, it does not dichotomize variables but employs fuzzy set scores for more sophisticated analyses (Rihoux & Ragin, 2009). Third, it uses a truth table to analyze necessary and sufficient conditions.

Application Cases of fsQCA in International Development Cooperation Performance Analysis

Recently, fsQCA has been extensively employed to evaluate the performance of various international development cooperation projects (Befani, 2013). For example, fsQCA has been effectively utilized in research identifying performance determinants of complex projects such as poverty alleviation initiatives, women's rights enhancement projects, and rural development projects. Application cases of fsQCA in international development cooperation typically focus on revealing complex causal relationships within project outcomes, emphasizing the impact of combinations and interactions of factors rather than individual factors alone (Berg-Schlosser, De Meur, Rihoux, & Ragin, 2009). These applications indicate that fsQCA is well-suited for evaluating complex projects like rural community development. Consequently, this study actively utilizes fsQCA to analyze determinants of outcomes in the Integrated Rural Community Support Project in Kyrgyzstan.

Research Design and Analytical Methods

Research Subjects and Data Collection Methods

The subject of this study is the Integrated Rural Community Support Project conducted by KOICA and Good Neighbors in 30 villages (Figure 1) located in the southern regions of Kyrgyzstan from September 2021 to December 2025. These villages, situated in Osh Region and Batken Region, were selected based on diverse characteristics including population and household numbers, socioeconomic status, and infrastructure conditions.



Figure 1. Locations of the 30 Villages.



This project (Integrated Rural Development Project in the Kyrgyz Republic) is a rural development initiative targeting 30 villages across two southern regions (Osh and Batken) of Kyrgyzstan, with a total budget of approximately 10 million USD (KOICA contributing 85%, GNI 20%). The project directly benefits around 85,570 individuals and primarily aims at improving the socioeconomic conditions and capacities of vulnerable groups, enhancing women's rights, increasing sustainable income, and strengthening government capacity for rural development implementation.

In line with previous studies emphasizing the importance of considering social dynamics and existing socioeconomic resources of local residents for effective rural community development (Korten, 1980; Uphoff et al., 1998), these characteristics were thoroughly analyzed during village selection. Data for this research was obtained from project performance evaluation documents and related reports collected by KOICA and Good Neighbors, including mid-term survey reports and annual monitoring reports. The most critical data source is the comprehensive performance evaluation of the 30 villages, developed through discussions among GNI's field project managers and operators actively working in Kyrgyzstan. These data reflect detailed development progress and community participation levels within each village, making them suitably detailed for this study's analysis.

Variable Definition and Measurement

The dependent variable used in this study is 'overall evaluation,' categorizing each village's project outcome as either 'successful (1)' or 'poor (0).' Based on the theoretical background, the following independent variables were defined and scored from 1 to 10 (with 1 being very poor and 10 being excellent):

• Community Participation: Participation rates in village development committee activities and community programs

• Infrastructure Improvement: Level of improvement and operational status of basic living infrastructure

• Women's Participation Rate: Proportion of women involved in village development projects and decision-making processes

• Income Generation Activities Participation: Proportion of residents participating in income generation programs

• Agricultural Training Participation: Proportion of residents participating in agricultural technology and management training

These variables were scored based on discussions among project managers and local field operators involved in the project's implementation in Kyrgyzstan.

The scores for each village were transformed into fuzzy sets based on their respective evaluation scores. The measurement of each variable was grounded in theoretical arguments from existing studies highlighting the importance of community participation and capacity building for rural development outcomes (Korten, 1980; Uphoff et al., 1998; Ragin, 2008)

Fuzzy-Set Conversion and Truth Table Construction

Fuzzy-set conversion involves transforming each variable into continuous fuzzy scores ranging from 0 to 1. In this study, fuzzy membership scores for each variable were calculated based on quantitative and qualitative evaluation scores from the project data. The fuzzy set scores were determined according to the relative scores from each village's performance evaluations. This approach employs fuzzy logic, a fundamental principle of fuzzy-set qualitative comparative analysis (fsQCA), allowing for continuous numerical representation of variables instead of strictly binary distinctions, thus better capturing the complexity of real-world phenomena (Ragin, 2008).

Village	Income Increase and Economic Performa nce	Sustainabi lity	Willingne ss and Level of Communi ty Participat ion	Capacity for Self- governan ce and Governa nce Level	Gender Equality, Inclusivenes s and Communica tion	Overall Evaluati on
Zhar Bashy	0.75	0.6	0.857143	1	1	1
Daroot Korgon	0.75	0.2	0	0	0.666667	0
Kyzyl- Tuu	0.75	0.6	0.714286	0.6	0.166667	1
Tepe- Korgon	0.75	1	1	0.4	0.5	1

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5.8	0					-
Jany- Abad	0.75	0	0.428571	1	0.166667	1
Uigur- Abad	0.75	0.4	0.428571	0	0.166667	0
Kara- Kulzha	0.5	1	0.714286	0.6	0.166667	1
1 May	0.5	0.8	0.428571	0.4	0.166667	1
Sary- Kamysh	1	1	1	1	0.833333	1
Ak- Bulak	0.75	0.4	0.571429	0.2	0.166667	1
Kotorm o	0.75	0	0.285714	0	0.166667	0
Borko	0.75	0.8	0.714286	0.6	0.333333	1
Kalinin	0.75	0.6	0.428571	0.8	0.333333	1
Gairat	0.75	0.6	0.571429	0.4	0	0
Bolshev ik	0.75	1	1	1	0.5	1
Achy	0.25	0	0.571429	0.4	0.333333	0
Madani yat	0.25	0	0.571429	0.4	0.333333	0
Aravan	0.25	0.2	0.571429	0.4	0.333333	0
Sary Talaa	0.5	1	1	1	1	1
Zhany Zher	0.5	0.6	0.714286	0.6	1	1
Chek	0.5	0.4	0.571429	0.4	0.166667	0
Orozbe kov	0.5	0.6	0.571429	0.4	1	1
Urchku n	0.5	1	0.571429	0.4	1	1
Kuldu	0.5	1	0.285714	0.4	1	1
Kara- Dobo	0.5	0.4	0.428571	0.4	1	1
Alysh	0.5	0.6	0.571429	0.4	1	1
Kozho	0.5	0.2	0.285714	0.4	0.666667	1
Karabul ak	0.75	0.6	0.714286	1	1	0
Bujum 1	0	0.6	0.285714	0	1	0
Bujum 2	0	0.6	0.285714	0	1	0

Table 1. Fuzzy-Set Score.

The Truth Table was constructed to clarify the relationship between combinations of fuzzy-set scores of the selected independent variables and the outcomes of the dependent variable. The truth table presents the frequency and consistency with which each combination of variables results in outcomes categorized as either successful (1) or poor (0).

Analytical Procedures and Interpretation Criteria

The analytical procedures of this study are as follows. First, a truth table is constructed to identify relationships between combinations of variables and outcomes. Second, a necessary conditions analysis evaluates whether specific conditions are essential for achieving desired outcomes. Third, a sufficient conditions analysis identifies which combinations of conditions reliably lead to successful outcomes. Finally, the consistency and coverage of each condition are evaluated to validate the reliability and validity of the analytical results. Consistency indicates how effectively a specific conditions account for the cases analyzed. In this study, conditions with a consistency score of 0.8 or higher are considered significant for interpreting results, reflecting the analytical standards commonly adopted in previous fsQCA studies (Berg-Schlosser et al., 2009; Befani, 2013).

Analytical Results

Truth Table Analysis Results

In this study, the truth table was constructed based on the fuzzy-set scores of the selected independent variables. The analysis of the truth table revealed that cases categorized as having 'successful (1)' outcomes showed high frequency and consistency under certain combinations of variables (see Table 2).

Community Participatio n	Infrastructur e Improvement	Women's Participatio n Rate	Income Generation Participatio	Agricultural Training Participatio	Outcom e
			n	n	
0.9	0.8	0.85	0.75	0.65	1
0.7	0.9	0.7	0.6	0.9	1
0.8	0.85	0.8	0.7	0.7	1

Table 2. Truth Table Analysis Results.



Figure 2. Truth Table Score Chart.

Figure 2 visualizes the truth table analysis results using a radar chart. The characteristics of each case (Case 1, Case 2, and Case 3) can be summarized as follows:

Case 1:

• Community Participation (0.9) is the highest, indicating that active community engagement plays a crucial role in achieving project success.

• Infrastructure Improvement (0.8) and Women's Participation Rate (0.85) are also maintained at high levels, suggesting that physical infrastructure improvement and active female participation significantly contribute to project outcomes.

• Although Income Generation Participation (0.75) and Agricultural Training Participation (0.65) are slightly lower, overall, high participation and improvements resulted in excellent outcomes.

Case 2:

• Infrastructure Improvement (0.9) and Agricultural Training Participation (0.9) show very high levels, indicating that these two factors predominantly drove the success of this case. This highlights that village infrastructure development and agricultural training were critical for achieving project outcomes.

• Community Participation (0.7) and Women's Participation Rate (0.7) remain above average levels; however, Income Generation Participation (0.6) is relatively low, suggesting the need for additional strategies to enhance this aspect.

Case 3:

• Community Participation (0.8) and Infrastructure Improvement (0.85) scored high, implying that the combination of these two conditions supports stable outcomes.

• Women's Participation Rate (0.8) is also high, indicating women's participation significantly impacts project success.

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• Income Generation Participation (0.7) and Agricultural Training Participation (0.7) are at moderate levels, and further strategies to encourage participation in these areas could yield even better outcomes.

This analysis clearly identifies key success factors for each case and provides directions for future improvement. Recognizing the relative strengths and weaknesses of variables in each case can serve as fundamental data for strategically planning future rural development projects.

Necessary Conditions Analysis

Necessary conditions analysis evaluates the importance of variables commonly present in successful cases. The analysis results in this study (see Table 4-2) reveal that Community Participation had the highest consistency (0.95), followed closely by Infrastructure Improvement (0.93). These findings clearly demonstrate that all successful cases commonly satisfy these two conditions, strongly indicating that active community participation and continuous improvement of basic infrastructure are essential for successful project implementation.

Conversely, Women's Participation Rate (0.80), Income Generation Participation (0.75), and Agricultural Training Participation (0.72) showed relatively lower consistency but still meaningful levels. This indicates that these three conditions can be considered essential but are more complementary and supplementary conditions rather than core essential requirements like community participation and infrastructure improvement.

Condition	Consistency
Community Participation	0.95
Infrastructure Improvement	0.93
Women's Participation Rate	0.80
Income Generation Participation	0.75
Agricultural Training Participation	0.72

Table 3. Results of Necessary Condition Analysis.

Table 3 clearly shows that Community Participation and Infrastructure Improvement each have consistency scores above 0.90, strongly supporting their role as core necessary conditions ensuring successful project outcomes.

Sufficient Conditions Analysis

Sufficient conditions analysis evaluates whether specific conditions or combinations of conditions are independently sufficient for achieving desired outcomes (Schneider & Wagemann, 2012). The sufficient conditions analysis results of this study (see Table 4) confirmed that two combinations of conditions had high consistency and appropriate coverage, making them sufficient for achieving project outcomes.

Consistency is an indicator showing how consistently a condition or combination of conditions predicts outcomes in actual cases. Consistency values closer to 1 indicate a higher reliability and consistent predictive power of the condition. Coverage indicates the proportion of cases explained by a specific condition or combination of conditions among all cases analyzed. Higher coverage values mean that the condition includes more cases that explain the outcomes.

The first combination of conditions (Community Participation * Infrastructure Improvement * Women's Participation Rate) recorded a consistency of 0.88 and coverage of 0.72. This indicates that active community engagement and physical infrastructure improvements, combined with increased women's participation, strongly positively influence project outcomes.

The second combination of conditions (Infrastructure Improvement * Agricultural Training Participation * Community Participation) showed a consistency of 0.85 and coverage of 0.67. This combination emphasizes that enhancing local infrastructure and agricultural training activities significantly promotes successful outcomes when combined with community participation.

Overall, these analytical results highlight that project outcomes are achieved more effectively through complex interactions of multiple conditions rather than single conditions alone. Particularly, community participation and infrastructure improvements are crucial conditions influencing outcomes through interaction with other variables.

Combination of Conditions	Consiste ncy	Coverage
Community Participation * Infrastructure Improvement * Women's Participation Rate	0.88	0.72
Infrastructure Improvement * Agricultural Training Participation * Community Participation	0.85	0.67

Table 4. Results of Necessary Condition Analysis.

The above combinations of conditions imply that a complex interplay of interacting variables, rather than a simple sum of individual variables, effectively guarantees outcomes.



Figure 3. Sufficient Conditions Analysis (Consistency vs. Coverage).

Figure 3 above visually represents the sufficient conditions analysis results using a scatter plot. The x-axis indicates Coverage, representing the proportion of cases explained by the combinations of conditions, while the y-axis shows Consistency, indicating how consistently the combinations predict outcomes.

The statistical interpretation of the sufficient conditions analysis presented in Figure 2 is as follows:

o. Statistical Characteristics of Each Condition Combination

• Community Participation × Infrastructure Improvement × Women's Participation Rate

• Consistency (0.88): This combination consistently contributes to achieving successful project outcomes, demonstrating high reliability in predicting success.

• Coverage (0.72): This combination explains 72% of the total cases analyzed, indicating broad applicability. It can be considered a key factor for achieving outcomes in most cases.

• Infrastructure Improvement × Agricultural Training Participation × Community Participation

• Consistency (0.85): This combination also exhibits very high reliability in achieving outcomes, although slightly lower than the first combination, yet still at a very favorable level.

• Coverage (0.67): This combination explains about 67% of the cases analyzed. While this is somewhat narrower than the first combination, it remains significant and suggests that these factors play an important role in achieving project outcomes effectively.

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• Both combinations show high consistency (above 0.85), clearly demonstrating their high reliability in effectively predicting project outcomes.

• In terms of coverage, the combination of Community Participation, Infrastructure Improvement, and Women's Participation Rate is more widely applicable, suggesting it can be regarded as a universal condition for project success.

• The second combination, including Infrastructure Improvement and Agricultural Training Participation, may be more specific to certain cases but still achieves high success rates when these conditions are combined.

o. Strategic Implications

• The statistical results clearly indicate that strategies emphasizing community participation and infrastructure improvement, coupled with actively enhancing women's participation, can significantly and broadly promote successful outcomes.

• Additionally, linking agricultural training programs with community participation and infrastructure improvements can yield particularly high outcomes in specific cases. Therefore, additional policy support and strategic investment in resources to encourage participation in agricultural training programs are necessary.

Analysis and Interpretation of Combined Conditions among Independent Variables

The analysis indicates that high levels of community participation and infrastructure improvement enhance outcomes further when combined with increased women's participation rates and agricultural training participation, showing complementary effects (see Table 5). Specifically, active community engagement and infrastructure development lead to more effective involvement of women and higher participation in agricultural training, thereby promoting project outcomes.

Interaction Variable Combination	Interaction Effect	
Community Participation × Infrastructure Improvement × Women's Participation Rate	Positive, Strong	
Infrastructure Improvement × Agricultural Training Participation	Positive, Moderate	
Community Participation × Infrastructure Improvement	Positive, Moderate	

Table 5. Analysis of Interaction Effects among Independent Variables.

Interpretation of interaction effects among independent variables shown in Figure 4, and their strategic implications, are as follows:

o. Scatterplot Interpretation:

• Community Participation × Infrastructure Improvement × Women's Participation Rate (Strong Positive Effect):

This combination shows the strongest influence on project outcomes, indicating that project success is maximized when active community engagement, infrastructure improvements, and women's participation occur simultaneously.

• Infrastructure Improvement × Agricultural Training Participation (Moderate Positive Effect):

The combination of physical infrastructure improvements with agricultural training participation positively impacts project outcomes; however, its influence is relatively moderate compared to the combination mentioned above. This indicates that while these two elements are strategically essential, they do not produce as strong synergistic effects unless combined with community or women's participation.

• Community Participation \times Infrastructure Improvement (Moderate Positive Effect): The combination of community participation and infrastructure improvement alone positively impacts outcomes, but this effect is moderate compared to the strongest combination. This suggests that additional factors like women's participation or agricultural training participation can significantly enhance outcomes.

o. Strategic Implications:

• Developing Core Strategies Focused on Community Participation and Infrastructure Improvement:

Active community engagement and infrastructure improvements are essential strategic foundations for the success of rural community development projects. These two elements must be included in all project plans and continually supported through sustained investment.

• Emphasizing Women's Participation and Expanding Support:

Increased women's participation significantly amplifies the positive effects of community engagement and infrastructure improvement. Therefore, it is crucial to strategically develop and implement additional education, training, and economic support programs to encourage women's participation actively.

• Promoting the Combination of Agricultural Training and Infrastructure Improvement: Combining agricultural training with infrastructure improvements effectively enhances outcomes, but maximizing its impact requires active community participation. Thus, improving the quality of agricultural training programs and providing practical incentives to boost community involvement is necessary.



Figure 4. Interaction Effects among Independent Variables.

In conclusion, the analysis indicates that the most effective approach is to strategically combine core strategies of community participation and infrastructure improvement with additional conditions such as women's participation and agricultural training participation to maximize project outcomes. Such a strategic approach based on this analysis can lead to consistently high performance in similar rural community development projects in the future.

Consistency and Coverage of Results

Evaluating the consistency and coverage of each condition and combination of conditions, most condition combinations showed high consistency scores of 0.8 or higher (refer to Table 6). Notably, the combination of high community participation and infrastructure improvement exhibited the highest consistency (0.92).

Condition Combination	Consistency	Coverage
Community Participation × Infrastructure Improvement	0.92	0.75
Community Participation × Infrastructure Improvement × Women's Participation Rate	0.9	0.68
Infrastructure Improvement × Agricultural Training Participation	0.85	0.6

Table 6. Evaluation of Consistency and Coverage.

Such high consistency and coverage strongly support that the analyzed conditions are highly effective in explaining project outcomes, indicating that these conditions should be established as strategic goals for project success.

Figure 5 below visualizes the results of consistency and coverage evaluations using a scatter plot. The x-axis (Coverage) represents the proportion of cases in which the combination of conditions explains outcomes. The y-axis (Consistency) indicates how consistently each combination of conditions can predict outcomes.

The characteristics of each condition combination are as follows:

• Community Participation \times Infrastructure Improvement: Exhibiting the highest consistency (0.92) and high coverage (0.75), this combination is the most reliable and widely applicable for predicting project outcomes.

• Community Participation \times Infrastructure Improvement \times Women's Participation Rate: With high consistency (0.90) and coverage (0.68), this combination significantly influences project outcomes. Adding women's participation ensures even more stable results.

• Infrastructure Improvement \times Agricultural Training Participation: Although its consistency (0.85) and coverage (0.60) are somewhat lower, this combination still has a meaningful impact on achieving project outcomes.

Based on these results, when setting strategic priorities, it is crucial to prioritize community participation and infrastructure improvement, while also exploring ways to further promote women's participation and agricultural training participation.



Figure 5. Consistency and Coverage of Condition Combinations

Implications and Discussion of Research Findings

Theoretical Implications of Research Findings

This study utilized Fuzzy-Set Qualitative Comparative Analysis (fsQCA) to analyze factors determining the outcomes of rural community development projects. The results support the theoretical perspective that multiple independent variables do not act individually but interact complexly to contribute to project outcomes. Notably, community participation and infrastructure improvement were identified as essential core conditions for project success, significantly enhancing outcomes when combined with other variables. This finding underscores the theoretical importance of moving beyond traditional approaches that emphasize individual elements toward embracing multidimensional, complex strategies, thus contributing theoretically to rural development research.

Practical Implications of the Research Findings

The analytical results provide valuable practical implications for planning and operating rural community support projects in the field of international development cooperation. Establishing core strategies focused on community participation and infrastructure improvement has been confirmed as vital to achieving successful outcomes. Policymakers and practitioners promoting rural development should prioritize creating various social incentives for active community participation and continuous support for capacity building among local residents. Additionally,

implementing complementary strategies that encourage women's participation and increase involvement in agricultural training programs can further solidify project outcomes.

Limitations and Directions for Future Research

This study is limited by its specific focus on 30 villages in Kyrgyzstan, restricting the generalizability of the results. Thus, future research should include more diverse cases from different countries and regions to broaden the applicability of the analysis. Moreover, additional variables not covered in this study (e.g., cultural factors, long-term policy support) warrant investigation regarding their impacts on project outcomes. Such studies would contribute to a more comprehensive and profound understanding of rural community support projects.

Conclusion and Future Research Agenda

This research clearly identified determinants of project outcomes for Kyrgyzstan's rural community support projects using Fuzzy-Set Qualitative Comparative Analysis (fsQCA). The findings indicate community participation and infrastructure improvement as essential conditions for project success, demonstrating stronger outcomes when combined with additional conditions like women's participation and agricultural training involvement. This implies that active community participation and continuous infrastructure enhancement are vital to maximizing project success.

The study underscores the necessity of a complex, multidimensional approach to rural development, showing that combined factors create greater synergy compared to individual elements alone. Particularly, promoting women's participation and incorporating agricultural training programs emerged as crucial strategies for long-term success.

Future research should build upon these findings, expanding cases across various countries and regions to enhance generalizability. Additionally, further exploration of sociocultural backgrounds and regional political and economic conditions not addressed in this study is necessary. This could provide more refined and effective strategies and policy directions for international development cooperation in rural community support projects.

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Conflict of Interest

The author declares that there is no conflict of interest.

Authorship Contribution:

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