Research on Precision Implementation of Rural Policies under Perception Differences Across Different Groups

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Abstract

Against the backdrop of China's rural revitalization strategy and the twentieth anniversary of Zhejiang's "Million-Project" (Qianwan Gongcheng) initiative, this study examines how perception differences across diverse rural resident groups influence policy effectiveness and inform precision policy-making. Drawing on survey data from 1,898 valid questionnaires and 1,258 in-depth interviews conducted across 200 villages in 11 prefecture-level cities of Zhejiang Province, the study constructs a five-dimensional evaluation framework encompassing ecological environment, infrastructure, industrial development, social governance, and cultural construction. Employing resident perception theory and stakeholder theory as dual theoretical lenses, the research reveals significant heterogeneity in policy perceptions across age, occupational, and regional groups. The 51–70 age cohort (31.24% of respondents) demonstrates the highest satisfaction with ecological improvement and infrastructure upgrades, whereas the 18–30 age group prioritizes industrial innovation and cultural vitality. Four core pain points are identified: talent shortage (68.86% of respondents), insufficient digital literacy among middle-aged and elderly populations, singular funding channels, and inadequate cultural heritage excavation. The study proposes a precision policy system integrating talent recruitment, digital empowerment, diversified funding mechanisms, and cultural IP development. These findings provide empirical evidence for transitioning rural policies from universal implementation to refined, group-specific governance, and offer replicable "Zhejiang experiences" for national rural revitalization.

Keywords

Rural revitalization, perception differences, precision policy-making, Million-Project, stakeholder theory, Zhejiang Province.

1. Introduction

Since the launch of the "Million-Project" (Qiancun Shifan, Wancun Zhengzhi) in 2003, Zhejiang Province has undergone a remarkable transformation in its rural landscape over the past two decades[1]. What began as an environmental cleanup initiative-moving from "dirty, disorderly, and poor" to "clean, beautiful, and harmonious"-has evolved through three strategic phases: village demonstration and remediation, beautiful village construction, and future-oriented common prosperity villages[2]. In 2024, the Central Committee of the Communist Party of

China and the State Council explicitly issued guidelines for promoting the Million-Project experience nationwide, marking its elevation from a provincial innovation to a national strategic model for comprehensive rural revitalization[3].

However, the effectiveness of rural policies is not uniformly experienced across all resident groups. Different demographic cohorts-young migrants[4], middle-aged farmers, elderly left-behind residents, village cadres, returning entrepreneurs-possess distinct needs, expectations, and perceptual frameworks regarding rural development policies. A one-size-fits-all approach risks misallocating resources and failing to address the differentiated demands of diverse stakeholders. This perceptual heterogeneity, often overlooked in macro-level policy assessments, represents a critical gap between policy design and grassroots implementation[5].

Existing scholarship on the Million-Project has predominantly focused on macroeconomic outcomes, ecological improvements, and institutional innovation. While these studies have documented the project's impressive achievements, relatively limited attention has been paid to the micro-level subjective experiences of rural residents, particularly how perceptions vary across population subgroups[6]. This research gap assumes particular importance as the project transitions into its next phase of "future villages" and "common prosperity villages," where precision governance and differentiated policy design become imperative[7].

This study addresses this gap by investigating perception differences across age, occupational, and regional groups, and by deriving evidence-based precision policy recommendations. The research is guided by two interrelated questions: (1) To what extent do perceptions of rural development policies vary across different resident groups? (2) How can these perceptual differences inform the design of more precise and differentiated policy interventions?

The study makes three primary contributions. First, it constructs a five-dimensional resident perception evaluation system using large-scale survey data (N = 1,898) covering 200 villages across all 11 prefecture-level cities in Zhejiang. Second, it systematically maps perception heterogeneity across demographic and occupational subgroups, identifying systematic patterns in satisfaction priorities and unmet needs. Third, it proposes a precision policy-making framework that translates perceptual differences into targeted interventions, offering actionable insights for policy iteration and nationwide replication.

2. Literature Review and Theoretical Framework

2.1. Rural Policy Effectiveness and Resident Perception

The literature on rural development policy evaluation has evolved from objective input-output metrics toward more nuanced subjective well-being assessments. Early studies of the Million-Project predominantly focused on technical implementation details, capital investment, and resource allocation, presenting macro-level quantitative indicators as the primary measure of success. As the project matured, scholars increasingly turned attention to its comprehensive impacts on rural economy, society, culture, and ecological environment[8].

Tu Shengwei identified institutional barriers, market function deficiencies, inadequate basic service systems, and absent effective incentives as key constraints on rural industrial development. Song Hongyuan and Jiang Fan argued that rural industry development requires leveraging industrial gradient transfer opportunities and utilizing unique agricultural and rural resources to realize diversified agricultural functions and deep rural value excavation. Chen Yiming and Wen Tao emphasized the role of digital inclusive finance in promoting rural industrial development from a policy perspective[9].

Despite this growing body of research, the literature reveals a notable scarcity of studies examining resident perceptions through psychological and sociological lenses. The complex relationships among different stakeholders and their dynamic changes remain insufficiently

explored. This study addresses this gap by integrating resident perception theory with stakeholder theory to provide a more comprehensive understanding of how rural policies are experienced and evaluated at the grassroots level[10].

2.2. Resident Perception Theory

Resident perception theory posits that policy effectiveness is not merely an objective outcome but is mediated by how residents subjectively experience and interpret policy changes. Rooted in environmental psychology and quality-of-life research, this framework emphasizes that individual satisfaction with public policies depends on the alignment between policy outputs and personal needs, values, and expectations. Subjective well-being, perceived quality of life, and sense of gain (dehuogan) serve as critical mediating variables between objective policy inputs and subjective outcomes.

In the rural context, resident perception encompasses multiple dimensions: perceived environmental improvement, perceived infrastructure convenience, perceived economic opportunity, perceived governance participation, and perceived cultural vitality. These perceptual dimensions are shaped by individual characteristics such as age, occupation, education level, and length of residence. Elderly residents, for instance, may prioritize environmental cleanliness and accessible healthcare, while young migrants may emphasize employment opportunities and digital connectivity.

This study operationalizes resident perception through a five-dimensional evaluation scale measuring satisfaction with ecological environment, infrastructure, industrial development, social governance, and cultural construction. The scale demonstrates strong internal reliability (Cronbach's alpha > 0.8 across all dimensions) and construct validity (KMO = 0.895, Bartlett's test $p < 0.05$).

2.3. Stakeholder Theory and Multi-actor Coordination

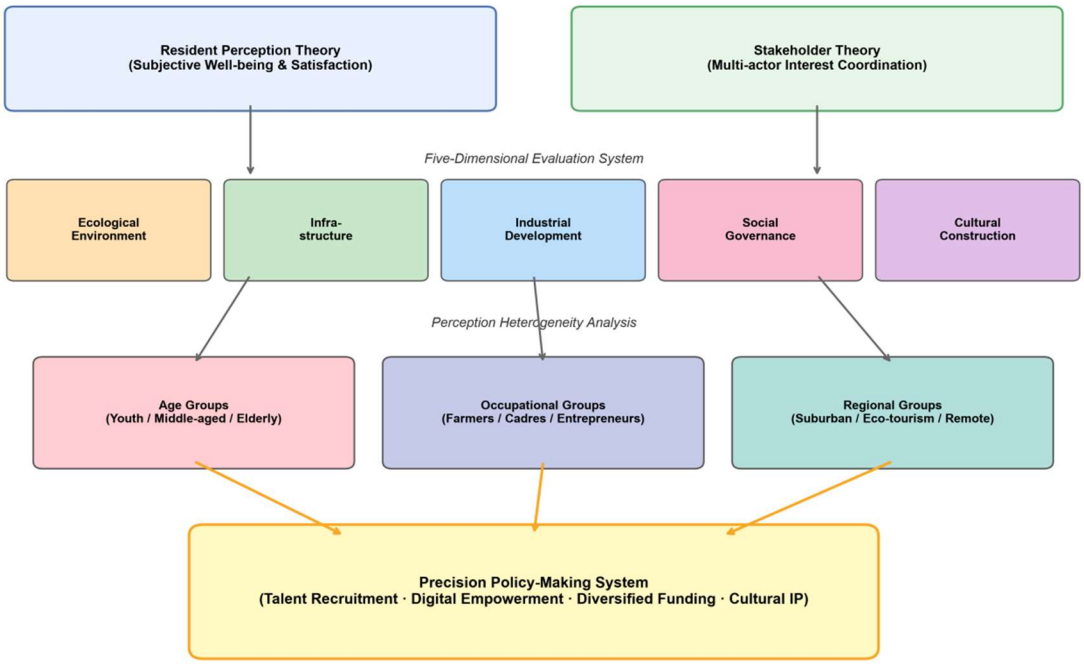


Figure 1. Conceptual framework: Perception-differentiated precision policy-making

Stakeholder theory, originally developed for organizational analysis, provides a valuable lens for understanding rural policy implementation. In the rural governance context, multiple stakeholders-government agencies at various levels, village collectives, enterprises, village

cadres, ordinary farmers, returning entrepreneurs, and social organizations-possess divergent interests, resources, and influence. Effective rural policy requires navigating and coordinating these heterogeneous stakeholder positions.

Government actors tend to emphasize overall ecological improvement and sustainable economic development. Enterprises focus on industrial profitability and return on investment. Village residents prioritize improved living conditions and income growth. Village cadres occupy a boundary-spanning role, mediating between top-down policy mandates and bottom-up resident demands. This multi-actor structure creates both coordination challenges and opportunities for collaborative governance.

The theoretical framework of this study integrates resident perception theory (micro-level subjective experience) with stakeholder theory (macro-level multi-actor coordination), as illustrated in Figure 1. This dual perspective enables systematic analysis of how different groups perceive rural policies and how their divergent interests can be reconciled through precision policy design.

3. Methodology

3.1. Study Area and Sampling

The study conducted field research across all 11 prefecture-level cities in Zhejiang Province: Hangzhou, Ningbo, Wenzhou, Jiaxing, Huzhou, Shaoxing, Jinhua, Quzhou, Zhoushan, Taizhou, and Lishui. A stratified random sampling method was employed to select 200 villages representing six distinct development types: suburban integration villages, eco-tourism villages, democratic governance demonstration villages, digital empowerment villages, economically underdeveloped villages, and natural resource-endowed villages.

The sampling design ensured representation across geographic regions (northern, central, southern Zhejiang), economic development levels (high, medium, low), and resource endowments. The sample included both benchmark villages such as Meilin Village (the origin of the Million-Project) and Xiaogucheng Village (democratic governance model), as well as less-developed villages such as Dushan Ancient Village in Lishui and Shanghuang Village in Jinhua, enabling systematic comparison of regional heterogeneity.

3.2. Data Collection

Data collection combined quantitative questionnaire surveys with qualitative in-depth interviews. A structured questionnaire was designed covering eight sections: basic demographic information, policy awareness, overall rural development perception, ecological environment improvement, infrastructure improvement, industrial development, social governance, and cultural construction. Satisfaction items were measured on a 5-point Likert scale (1 = very dissatisfied, 5 = very satisfied).

A total of 1,996 questionnaires were distributed, with 1,898 valid responses obtained, yielding a valid response rate of 95.1%. In-depth interviews were conducted with 1,258 individuals including ordinary villagers, village cadres, enterprise operators, and returning entrepreneurs. Interviews were semi-structured, lasting 40–60 minutes each, and were recorded with informed consent for subsequent transcription and analysis.

The questionnaire demonstrated strong psychometric properties. Cronbach's alpha coefficients exceeded 0.8 for all dimensions (policy awareness dimension: 0.872; overall rural development dimension: 0.843), indicating excellent internal consistency. The KMO measure of sampling adequacy reached 0.895, and Bartlett's test of sphericity was statistically significant ($p < 0.05$), confirming construct validity and suitability for factor analysis.

3.3. Analytical Approach

The study employs a mixed-methods research design integrating quantitative and qualitative analysis. Quantitative analysis includes descriptive statistics, analysis of variance (ANOVA) to test for significant differences across groups, and factor analysis to identify underlying perceptual dimensions. Qualitative analysis of interview transcripts follows a thematic coding approach, identifying recurring patterns in resident narratives that explain quantitative findings.

The analytical procedure proceeds in four stages: (1) descriptive profiling of sample characteristics; (2) calculation of dimension-level satisfaction scores and comparison across demographic subgroups; (3) identification of significant perception differences through ANOVA and post-hoc tests; and (4) interpretation of qualitative interview data to explain the mechanisms underlying observed differences. All quantitative analyses were performed using SPSS statistical software.

4. Data Analysis and Results

4.1. Sample Characteristics

Table 1 presents the demographic profile of survey respondents. The sample covers a balanced distribution across age groups, with the 51–70 age cohort representing the largest proportion (31.24%), reflecting the typical age structure of rural populations in Zhejiang. Occupational distribution includes farmers, village cadres, enterprise employees, returning entrepreneurs, and elderly residents, ensuring representation across key stakeholder groups.

Table 1. Demographic characteristics of survey respondents (N = 1,898)

Demographic Variable	Category	Frequency (N)	Percentage (%)
Age	18–30 years	342	18.02
	31–50 years	586	30.87
	51–70 years	593	31.24
	70+ years	377	19.87
Occupation	Farmers	712	37.51
	Village cadres	156	8.22
	Enterprise employees	423	22.29
	Returning entrepreneurs	234	12.33
	Elderly / retired	373	19.65
Region	Northern Zhejiang	764	40.25
	Central Zhejiang	531	27.98
	Southern Zhejiang	603	31.77

4.2. Overall Satisfaction Across Five Dimensions

Table 2. Overall satisfaction scores across five evaluation dimensions

Evaluation Dimension	Mean Score (1–5)	Std. Deviation	Ranking
Infrastructure improvement	4.28	0.72	1
Ecological environment	4.21	0.78	2
Social governance	4.02	0.76	3
Industrial development	3.87	0.85	4
Cultural construction	3.72	0.91	5

Table 2 presents the overall satisfaction scores across the five evaluation dimensions. The results indicate generally positive perceptions of the Million-Project's outcomes, with the

highest satisfaction recorded for infrastructure improvement (M = 4.28, SD = 0.72) and ecological environment improvement (M = 4.21, SD = 0.78). Industrial development (M = 3.87, SD = 0.85) and cultural construction (M = 3.72, SD = 0.91) receive comparatively lower ratings, suggesting areas requiring further policy attention.

4.3. Age Group Perception Differences

A central finding of this study is the systematic variation in policy perceptions across age groups. Figure 2 visualizes satisfaction scores across four age cohorts on all five dimensions. The 51–70 age group demonstrates the highest satisfaction with ecological environment (M = 4.48) and infrastructure (M = 4.52), reflecting this cohort's direct experience of the dramatic transformation from pre-Million-Project environmental conditions. Their satisfaction with industrial development (M = 3.62) and cultural construction (M = 3.55) is comparatively lower.

In contrast, the 18–30 age group exhibits the highest satisfaction with industrial development (M = 4.21) and cultural construction (M = 4.05), but comparatively lower ratings for social governance (M = 3.68). This pattern suggests that younger residents prioritize economic opportunity and cultural vibrancy over environmental improvements that they may take for granted. The 70+ age group shows the lowest overall scores across dimensions, particularly for industrial development (M = 3.25) and cultural construction (M = 3.32), potentially reflecting digital exclusion and limited engagement with new economic forms.

One-way ANOVA confirms that age group differences are statistically significant for all five dimensions ($p < 0.001$). Post-hoc Tukey tests reveal that the 51–70 group differs significantly from the 18–30 group on ecological environment ($p < 0.01$) and infrastructure ($p < 0.001$), while the younger group scores significantly higher on industrial development ($p < 0.001$) and cultural construction ($p < 0.01$).

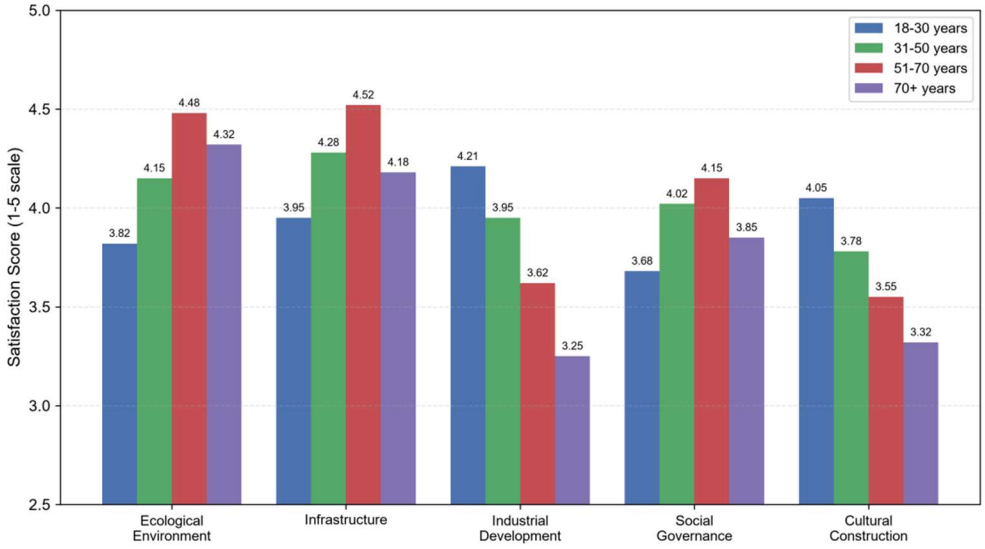


Figure 2. Policy perception differences across age groups (satisfiance scores on 1–5 scale)

4.4. Occupational Group Perception Profiles

Figure 3 presents perception profiles across five occupational groups using a radar chart. Village cadres consistently report the highest satisfaction across all dimensions, reflecting their role as both implementers and beneficiaries of rural development policies. Farmers show high satisfaction with ecological environment (M = 4.35) and infrastructure (M = 4.42), but lower ratings for cultural construction (M = 3.52).

Returning entrepreneurs represent a distinctive profile: they report the highest satisfaction with industrial development (M = 4.48) and cultural construction (M = 4.28), but comparatively

lower ratings for infrastructure (M = 3.85) and social governance (M = 3.65). This pattern suggests that while returning entrepreneurs value the entrepreneurial opportunities and cultural vitality of rural areas, they remain concerned about logistical infrastructure and governance efficiency. Elderly residents exhibit the lowest industrial development satisfaction (M = 3.22), consistent with their limited participation in new economic activities.

Table 3 summarizes the ANOVA results for occupational group differences. The F-statistics indicate significant variation across occupational groups for all dimensions, with particularly large effect sizes for industrial development ($F = 34.21$, $p < 0.001$) and cultural construction ($F = 28.76$, $p < 0.001$).

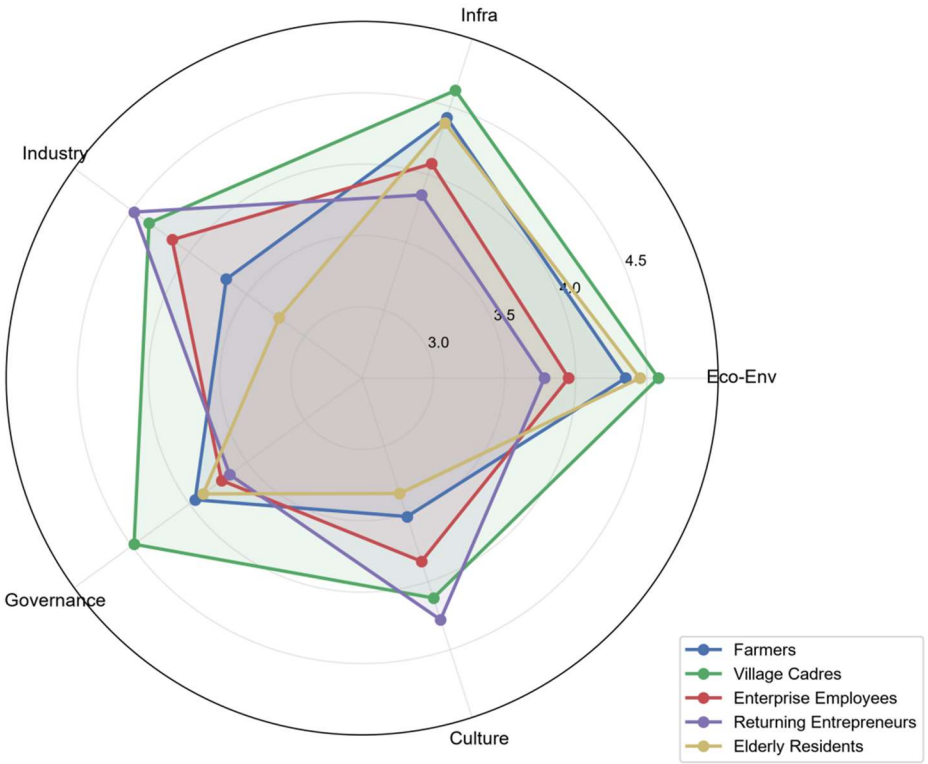


Figure 3. Perception profiles by occupational group (radar chart, 1–5 scale)

Table 3. ANOVA results for occupational group differences across dimensions

Dimension	F-statistic	p-value	Effect Size (η^2)
Ecological environment	18.47	<0.001	0.038
Infrastructure	22.63	<0.001	0.046
Industrial development	34.21	<0.001	0.067
Social governance	15.89	<0.001	0.033
Cultural construction	28.76	<0.001	0.058

4.5. Core Pain Points Identified

Qualitative analysis of interview data, combined with quantitative open-ended responses, identified four core pain points constraining further rural development. The most prominent issue is talent shortage, cited by 68.86% of respondents as the primary challenge. Middle-aged and elderly digital literacy deficiency represents the second major concern, particularly affecting the 51+ age groups who struggle to participate in digital governance platforms and e-commerce activities.

Third, funding channels remain overly reliant on government investment, with limited participation from market forces and social capital. Village cadres frequently noted that sustainable financing mechanisms are lacking for long-term maintenance and upgrading. Fourth, distinctive cultural resources are insufficiently excavated and commercialized. Many villages possess unique folk traditions, historical sites, and craft heritage, but these have not been transformed into sustainable cultural industries or tourism products.

Table 4 summarizes these four pain points, their prevalence across groups, and representative interview quotations.

Table 4. Core pain points identified from survey and interview data

Pain Point	Prevalence	Most Affected Groups	Representative Quote
Talent shortage	68.86%	All groups, especially youth	Young people all leave for cities; who will run the village in 10 years?
Insufficient digital literacy	54.32%	Elderly (70+), middle-aged women	I cannot use the smart notice board; the village WeChat group is too complicated for me.
Singular funding channels	47.65%	Village cadres, underdeveloped villages	We rely entirely on government allocations; no stable income of our own.
Inadequate cultural excavation	41.28%	Eco-tourism villages, southern Zhejiang	We have old folk songs and handicrafts, but nobody comes to experience them.

5. Discussion

The findings of this study illuminate the complex relationship between objective policy outcomes and subjective resident perceptions. While the Million-Project has achieved remarkable objective improvements-documented by extensive ecological, infrastructural, and economic data-these improvements are not uniformly experienced or valued across all resident groups. The significant perception heterogeneity revealed in this research underscores the importance of moving beyond input-output evaluation frameworks to incorporate subjective well-being and perceptual alignment as critical dimensions of policy success.

The age-based perception differences observed in this study carry important policy implications. The older cohort's high satisfaction with environmental and infrastructure improvements reflects intergenerational comparison: having experienced the pre-Million-Project conditions of the early 2000s, they perceive dramatic progress. Younger residents, by contrast, who have grown up with these improvements as baseline conditions, focus more on industrial opportunity and cultural vitality. This generation-specific expectation gap suggests that policy communication should be tailored to different age cohorts, emphasizing different dimensions of progress.

Occupational differences reveal another layer of perceptual complexity. Village cadres' uniformly high satisfaction reflects both their positional role as policy implementers and their greater access to information and resources. Returning entrepreneurs' distinctive profile-high satisfaction with industrial opportunity but lower satisfaction with governance and infrastructure-points to specific frictions in the rural entrepreneurial ecosystem. These findings resonate with stakeholder theory, confirming that different stakeholder groups evaluate policies based on their specific interest positions and resource dependencies.

The four core pain points identified-talent shortage, digital literacy gaps, funding constraints, and inadequate cultural excavation-are not uniformly distributed but cluster in specific village types and demographic groups. Talent shortage is most acute in remote southern Zhejiang villages; digital literacy gaps disproportionately affect elderly residents; funding constraints

plague economically underdeveloped villages; and cultural excavation deficiencies are most notable in eco-tourism villages with unexploited cultural heritage. This differential distribution reinforces the necessity of precision, rather than uniform, policy design.

These findings contribute to the emerging literature on rural governance precision (jingzhihua zhiliao) in China. By empirically demonstrating that perception differences are systematic and multidimensional, the study provides evidence that one-size-fits-all policy approaches systematically misallocate resources relative to resident needs. The Zhejiang experience, while context-specific, offers generalizable insights for rural policy design worldwide: effective rural governance requires continuous perceptual feedback mechanisms that capture the differentiated needs of diverse resident groups.

6. Conclusion and Policy Implications

This study has examined perception differences across diverse resident groups in the context of Zhejiang's twenty-year Million-Project, and has derived implications for precision rural policy-making. Based on large-scale survey data (N = 1,898) and in-depth interviews (N = 1,258) across 200 villages, the research reveals systematic heterogeneity in policy perceptions across age, occupational, and regional dimensions. Four core pain points-talent shortage, digital literacy deficiency, singular funding channels, and inadequate cultural excavation-have been identified as key constraints on further rural development.

The following precision policy recommendations emerge from these findings:

First, differentiated talent recruitment strategies should target different village types and age cohorts. For youth outflow problems in remote villages, establishing "outpost talent stations" (zaiwai rencai yizhan) and agricultural maker incubation programs can attract returning entrepreneurs. For middle-aged farmers, vocational training programs should focus on digital skills and modern agricultural techniques rather than generic employment training. The three-pronged model of outpost stations, maker incubation, and new-type professional farmer cultivation addresses different stages and types of talent needs.

Second, an age-adapted digital literacy training system should be developed for middle-aged and elderly residents. Rather than forcing elderly users into complex digital platforms, policy should invest in simplified operation tools, community-based assistance, and hybrid online-offline governance channels. The goal is not digital inclusion for its own sake, but ensuring that elderly residents can access essential services and participate in governance without facing technological barriers.

Third, a diversified funding mechanism combining government guidance, market operation, and social participation should replace the current reliance on government investment. Village collective economic organizations should be supported in developing sustainable revenue streams-through rural tourism, property management, and cooperative enterprises-rather than depending on transfer payments. Social capital participation should be facilitated through clear incentives and transparent governance structures.

Fourth, distinctive cultural resource excavation and IP development should be prioritized as a strategy for rural differentiation. Rather than pursuing homogenized rural tourism, villages should leverage unique folk traditions, historical heritage, and local crafts to create distinctive cultural products and experiences. The synergy of cultural IP creation, creative product development, and folk activity promotion can transform cultural resources into sustainable economic assets.

The "Zhejiang model" of rural revitalization-characterized by effective governance, ecological livability, democratic construction, and digital technology-offers replicable lessons for other regions. However, the findings of this study caution against mechanical replication. The success of precision rural policy-making depends on continuous diagnosis of local resident perceptions

and differentiated adjustment of policy instruments. As China advances toward comprehensive rural revitalization, the transition from universal policy implementation to precision, perception-responsive governance represents both an imperative and an opportunity.

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