



Survey on Satisfaction with Rural Infrastructure in Jiaozuo City in the Context of Rural Revitalization

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Abstract. This paper examines farmers' satisfaction with rural infrastructure in Jiaozuo City through a questionnaire survey, covering their understanding of current rural infrastructure, satisfaction levels with different types of infrastructure, and willingness to support future infrastructure development. Finally, a set of optimization strategies are proposed based on identified shortcomings in infrastructure construction, policy transparency, and investment practices, taking into account the unique characteristics of Jiaozuo City and feedback from interviewed farmers.

Keywords: Rural Revitalization; Rural Infrastructure; customer satisfaction questionnaire.

1 Introduction

Since 2004, China has prioritized addressing the three rural issues (rural areas, agriculture, and farmers). With policy adjustments and increased financial investments, rural living conditions have significantly improved. However, challenges persist in rural infrastructure development despite heightened investment, with emerging issues exacerbating the situation. This can be attributed to a misalignment between infrastructure construction and rural households' needs. Additionally, the predominant top-down approach in governance, from the central government to local administrations and grassroots village committees, has exacerbated issues such as inadequate infrastructure investment, insufficient maintenance, and a lack of effective monitoring mechanisms in many rural areas. Consequently, farmers, as the primary beneficiaries of infrastructure, often express low satisfaction levels. We should focus on aligning rural development strategies with the aspirations of rural residents, thus optimizing the effectiveness of rural construction initiatives and minimizing inefficiencies.

Building upon this foundation, this paper delves into the context of rural revitalization, focusing specifically on Jiaozuo City. It involves gathering data and conducting surveys to gauge farmers' satisfaction levels and their perception of current rural infrastructure initiatives. Through objective analysis, the study aims to identify prevalent issues within Jiaozuo City's infrastructure development, thereby facilitating targeted improvements aligned with local needs and objectives.

The central government's No.1 document of 2008 prioritized bolstering agricultural infrastructure as a means to drive agricultural development and enhance farmers' income. This directive laid out a comprehensive strategic framework for rural infrastructure development across various sectors. Subsequently, scholars have extensively researched diverse facets of rural infrastructure, contributing valuable insights to the field.

During the rapid development of rural infrastructures in China, many important issues such as the real wishes of farmers and the proper management of the infrastructure have been overlooked, resulting in a weak sense of gain among farmers[1].Also, Han analyzed the trends and driving factors of the coordinated development of rural infrastructure and ecological environment in the western region from 2012 to 2021[2].Lu found that national highways, provincial highways, and county roads have played a positive role in narrowing the urban-rural income gap by facilitating rural labor mobility[3]. Chen, Hui presents strategic recommendations on how the government can incentivize private capital (PC) to participate in the urban-rural infrastructure transformation (URIT). These recommendations primarily include enhancing the profitability of URIT projects, innovating PC participation models, improving supporting policies, and strengthening coordination among local policies[4].

Yogita Shamdasani estimates the effects of improvements in infrastructure under a large rural road-building program on production decisions in agriculture and highlights the importance of last-mile connectivity in remote areas[5]. Some scholars focus on the barriers that impede the effective governance of community infrastructure planning. It is important to integrate communities, stakeholders and government agencies [6].

As urbanization in China continues to accelerate, rural areas are undergoing rapid transformations, and rural infrastructure plays an indispensable role in various aspects of farmers' lives. However, according to the research conducted by numerous scholars, uneven regional development remains a significant challenge that cannot be overlooked.

In light of this, this paper focuses on rural infrastructure in Jiaozuo City as the research subject. It employs a satisfaction survey among villagers to delve into the problems and underlying reasons encountered during the rural infrastructure construction process in Jiaozuo City. By drawing upon both domestic and international experiences, the paper puts forward recommendations aimed at enhancing rural infrastructure in Jiaozuo City. These suggestions are intended to contribute to rural revitalization efforts and ultimately improve the well-being of farmers.

2 Overview of the Study Area

Jiaozuo City, situated in the Henan Province of central China, serves as the focal point of this study. With a rich cultural heritage and a blend of urban and rural landscapes, Jiaozuo City encapsulates the complexities and challenges inherent in contemporary rural development initiatives.

Its geographical features, including plains, mountains, and rivers, greatly influence agricultural practices and infrastructure requirements. While agriculture remains a

significant source of livelihood, rapid urbanization and modernization have reshaped its rural areas. As urbanization accelerates and economic dynamics evolve, rural infrastructure plays a crucial role in socio-economic development and sustainable growth. Despite efforts to strengthen rural infrastructure, challenges such as uneven development and resource constraints persist, prompting a comprehensive examination. Through in-depth analysis and stakeholder engagement, this study aims to identify key issues, understand local dynamics, and formulate targeted strategies for rural revitalization and improved well-being. By providing valuable insights and actionable recommendations, it seeks to inform policy-making and drive positive change in Jiaozuo City.

3 Questionnaire Survey and Analysis

3.1 Questionnaire Development and Data Collection

Based on the definition of rural infrastructure and the categorization of living infrastructure, and considering the unique characteristics of Jiaozuo City, we have carefully selected variables to design a comprehensive questionnaire. This questionnaire is divided into three parts:

The first part focuses on investigating the individual characteristics of farmers, including gender, age, education level, monthly household income, and income structure, among others. These indicators are essential for understanding how factors like age group, income bracket, and literacy level influence farmers' satisfaction levels.

The second part entails a satisfaction survey regarding rural infrastructure. It aims to assess farmers' contentment levels across various aspects such as rural road hardening, drinking water safety, kitchen fuel renovation, communication, garbage disposal, fitness and recreation, education, and medical care. This section comprises 17 questions covering farmers' perceptions of the current infrastructure situation, satisfaction with each infrastructure element, comparison with previous years, and willingness to support future infrastructure projects.

Rural roads, drinking water, household fuel, communication and signal, garbage disposal, fitness and recreation, education, and medical care are integral components of rural infrastructure construction and have been focal points of recent state-driven initiatives. Consequently, the questionnaire is structured to gauge the current status of infrastructure development in Jiaozuo City across these domains.

The third part delves into farmers' attitudes and suggestions regarding rural infrastructure construction in Jiaozuo City. By exploring farmers' perspectives on funding, planning, and priorities for future construction, we aim to glean insights into the most effective models for rural development.

This study was conducted between June 2023 and September 2023 through a questionnaire survey employing a stratified random sampling method. We selected Wen County, Wuzhi County, and Boai County as sample areas, choosing three villages from each county. Using random selection within these villages, we surveyed 300 households, resulting in 248 valid responses—a commendable 82.7% response rate.

3.2 Analysis of Questionnaire Results

Based on the questionnaire results, it's evident that male farmers constitute 57.7% of the surveyed population, slightly outnumbering females. Given the questionnaire's complexity and farmers' cognitive capabilities, respondents primarily fell within the age range of 18-60, with 75.8% aged 18-40 and 23% aged 41-60. Household income primarily stemmed from wages, agricultural production, and self-employment, comprising 40.7%, 32.7%, and 20.6%, respectively. Monthly household income distribution appeared relatively balanced, with 88.7% of households earning over 2,000 yuan, indicating a moderate level of economic development in rural Jiaozuo City.

Education levels among farm households were generally modest, with 69.3% possessing junior high school education or below. Additionally, 14.7% of surveyed farmers were party members or held village and township cadre positions, potentially offering more insights into rural infrastructure's current status and future development due to their enhanced understanding of local conditions.

The paper employs Likert's five-point scale method to gauge farmers' satisfaction, where higher scores denote greater satisfaction and lower scores signify dissatisfaction. The scale ranges from "1" (very dissatisfied) to "5" (very satisfied).

Table 1. Farmer infrastructure satisfaction evaluation

Projects /Options	Very dissatisfied(1)	unsatisfactory(2)	general(3)	relatively satisfied(4)	very satisfied(5)	mean
road	6.4%	10.3%	29.4%	46.1%	7.8%	3.39
pipd water	9.3%	11.3%	47.5%	25.5%	6.4%	3.08
irrigation	7.8%	20.1%	42.2%	21.1%	8.8%	3.03
Broadband	5.9%	15.2%	39.7%	29.9%	9.3%	3.22
petroleum	7.3%	11.3%	30.4%	45.1%	5.9%	3.31
electricity	8.2%	17.2%	41.7%	24.1%	8.8%	3.08
environment	11.8%	24.5%	38.2%	18.1%	7.4%	2.85
recreation	13.2%	28.4%	25.5%	22.5%	10.4%	2.89
education	9.8%	16.7%	42.6%	23.1%	7.8%	3.02
healthcare	6.9%	14.2%	41.2%	28.9%	8.8%	3.19
total						3.11

Table 1 shows various aspects of village facilities, including roads, piped water, irrigation, kitchen fuel, broadband, electricity, garbage disposal, recreational facilities, education, and healthcare. Comparisons are drawn between current infrastructure status and that of neighboring villages, with villagers' satisfaction scores tallied to calculate average and total scores.

Overall, farmers in Jiaozuo City express moderate satisfaction with infrastructure development, though dissatisfaction is notable in garbage disposal and recreational facilities, scoring below 3. The satisfaction ranking for facilities is as follows: roads, kitchen fuel, broadband, healthcare, water supply, electricity, irrigation, education, recreational facilities, and garbage disposal. Roads and kitchen fuel garner the highest satisfaction rates, with over half of farmers expressing satisfaction, while recreational facilities and garbage disposal receive the lowest satisfaction, with less than a third of farmers satisfied.

Several factors contribute to this pattern. Firstly, age plays a role, with younger farmers having higher expectations due to exposure to urban amenities, thus affecting satisfaction evaluations. Secondly, the quality and relevance of infrastructure impact satisfaction; for instance, basic road hardening garners higher satisfaction compared to inadequate garbage disposal measures. Lastly, the prioritization of infrastructure projects influences satisfaction, with road construction and kitchen fuel upgrades receiving more attention and investment than recreational facilities, leading to lower satisfaction levels in the latter.

In the cross-analysis, 158 farmers (63.7%) expressed satisfaction with rural infrastructure, while 90 (36.3%) expressed dissatisfaction. Among male respondents, 93 (65%) were satisfied and 41 (35%) were dissatisfied. Among female respondents, 65 (61.9%) were satisfied and 40 (38.1%) were dissatisfied. Gender does not appear to significantly influence rural households' satisfaction with infrastructure.

Among the respondents, satisfaction with infrastructure varied across age groups: 60.7% of farmers aged 18-30, 65.1% aged 31-40, 71.4% aged 41-50, and 73.7% aged 51-60 expressed satisfaction. Generally, satisfaction with infrastructure increases with age, reflecting evolving expectations. Younger farmers, aged 18-30, may have higher demands for rural living conditions compared to older generations, potentially contributing to slightly lower satisfaction levels in this age group.

Households whose main source of income is wages exhibit the lowest overall satisfaction with rural infrastructure, at 60.2%. Conversely, households relying on agricultural production as their primary income source display the highest satisfaction, reaching 76.1%. As more farm households pursue opportunities outside agriculture to boost income, 40.7% now rely on wages as their primary income source. This demographic often gains exposure to better living standards in urban areas, thereby raising their expectations for rural infrastructure. Consequently, their satisfaction levels with local amenities tend to be relatively low.

The cross-tabulation analysis reveals a correlation between farming households' overall satisfaction with rural infrastructure and their monthly income. Specifically, households earning 0-2000 RMB per month exhibit a satisfaction rate of 56.5%, while those earning 2000-4000 RMB and 4000-6000 RMB demonstrate rates of 60% and 64.6% respectively. Notably, households earning 6000 RMB or more per month display the highest satisfaction rate at 73.2%. This trend suggests that as monthly income increases, satisfaction with rural infrastructure also rises. Higher-income households tend to invest more in facilities with private attributes, such as kitchen renovations and broadband construction, leading to increased satisfaction. Additionally, they have greater flexibility in selecting educational and medical resources, contributing to their higher satisfaction rates.

In terms of the education level of the farm households, there are fewer respondents below elementary school, and no cross-tabulation analysis will be conducted. The overall satisfaction rate with rural infrastructure is 67.9% for farm households with elementary school education, the highest overall satisfaction rate with rural infrastructure is 72.6% for farm households with middle school education, and the lowest overall satisfaction rate with rural infrastructure is for farm households with college and above education, at 57.6%. In general, the higher the level of education, the higher the overall

quality of farmers and the higher their demand for quality of life, so their satisfaction with the current rural infrastructure is lower.

4 Conclusion

Finally, from the actual situation of Jiaozuo City and the problems and suggestions raised by farmers, this paper puts forward some practical suggestions for the future rural construction of Jiaozuo City.

To enhance villagers' engagement and investment in rural infrastructure, it's crucial to unblock communication channels and boost transparency. Improved living standards and education levels have heightened villagers' expectations for better infrastructure. However, opaque policies dampen enthusiasm, as villagers are unaware of construction plans and fund allocation. Therefore, the Jiaozuo City government must enhance policy transparency, ensuring villagers, particularly those interested in construction, have access to information on project planning and progress.

Furthermore, while government and social enterprises drive rural infrastructure development, farmers play a vital role in its maintenance. Strengthened publicity and guidance are necessary to encourage villagers' involvement in facility management. This can include promoting cultural activities using village facilities, outlining villagers' responsibilities for self-supervision and management, and fostering habits like responsible waste disposal and public facility care.

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