

Research Paper: Evaluation and Assessment of Creativity Indicators in Rural Settlements Peripheral Birjand City

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ABSTRACT

Purpose: Rural creativity refers to the ability of individuals and rural communities to generate innovative ideas, solutions, and products to address local problems and improve living conditions. This type of creativity is often associated with the use of limited resources and indigenous knowledge, and it can manifest in various fields such as agriculture, handicrafts, tourism, education, and simple and practical technologies. In this context, the present research aims to evaluate and assess the indicators of creativity in rural settlements on the periphery of Birjand City.

Methods: The research method is descriptive-analytical in nature, applied in purpose, and quantitative in approach. The data collection methods for the research include both documentary and field approaches. The statistical population consists of a total of 6,423 households, and using Cochran's formula, 384 households were determined as the sample size. For data analysis, SPSS software (binomial and Friedman tests) was employed.

Results: In all creativity indicators (economic creativity, social and cultural creativity, environmental creativity, technological creativity, and creativity in tourism), except for educational creativity, which had an average above 3, the performance is evaluated as weak; consequently, the status of these indicators is unfavorable. Additionally, the results of the Friedman test showed that the educational creativity indicator, with an average of 5.62, ranked highest among other indicators.

Conclusion: Creativity indicators in rural settlements can help identify the strengths and weaknesses of these communities and provide solutions to enhance creativity and innovation. This process not only leads to an improvement in the quality of life for rural residents but can also contribute to the sustainable and balanced development of rural settlements in the studied region.

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1. Introduction

The village is the oldest form of human settlement, and rural living is one of the oldest ways of human life (Izadi et al., 2023: 90). Today, most rural areas in developing countries face various economic, social, and environmental challenges (Obonyo & Fwaya, 2012: 2). These challenges, along with weak management, have led to the underdevelopment of rural areas. Among these, economic problems such as seasonal unemployment, low income, and poverty are among the most significant obstacles to development in these regions (Surchev, 2010: 237; Nemirschi & Craciun, 2010: 39). This is even though, over centuries, villages have played an effective role as places for living and production.

However, under current conditions, due to events, government interventions, and changes in lifestyle during the transition from productivism, many villages, instead of benefiting from sustainable development, face instability. They lose their population through migration and encounter issues such as population depletion and physical degradation (Rastghalam et al., 2016: 319). Additionally, the uneven urban expansion that occurred in the second half of the 20th century in most countries has led to urban areas growing under pressure into rural zones, absorbing rural settlements. This has significantly impacted the economic, social, cultural, spatial, and physical dimensions of peripheral rural centers. In many cases, due to the wave-like nature of these trends, villages closest to cities experience the most significant impacts.

One such impact is urban creativity and its influence on these areas. The development of creative activities is considered one of the influential factors in rural development. Rural creativity has emerged as a pathway to sustainable development for rural communities, especially in less developed societies (Einali et al., 2019: 33). In the current period, the creative village approach, as a new perspective in rural development, seeks to provide a high-quality and creative living environment in rural areas (Jahantigh et al., 2020: 323). One of the most successful ways to transform a village into one with a successful economy is the application of creative village components. The creativity of villages plays a fundamental role in their development and, in this regard, provides sustainable income generation for rural communities (Hajarian, 2021: 173).

The development of creative activities emerged as one of the influential factors in rural development (Figueiredo & Raschi, 2013: 1; Ramjit, 2015: 3). The concept of creativity, which was formally discussed in 1965 at the United Nations, aimed to create creative urban and regional spaces to achieve healthy and efficient competition. Neglecting villages slows the realization of urban creativity and places villages in a crisis-inducing isolation (Yasuri & Sojoodi, 2016: 1). The 21st century is the century of ideas and creativity. In this century, human creativity and talent are considered the main drivers of economic, social, and cultural development, with the increasing competition among regions and countries becoming increasingly dependent on nurturing, retaining, and attracting it (Goldberg-Miller, 2019: 27).

In the context of Iranian cities, especially Birjand, which possesses a rich historical and cultural heritage alongside diverse geographic features, there is a wealth of natural and cultural assets. These assets and natural-geographical contexts can play a significant role in cultural development and ultimately the realization of creativity in the city and its peripheral villages. The peripheral and integrated villages of Birjand possess cultural sites and attractive tourist centers that daily host a large population, including the creative class. Therefore, evaluating and assessing creativity indicators in the rural settlements surrounding Birjand can significantly contribute to improving the quality of life in these areas. It can also provide innovative solutions to address economic, social, cultural, and environmental challenges, paving the way for sustainable development.

2. Literature Review

Today, one of the major issues faced by countries is the stagnation and decline of villages due to various factors, including unemployment, migration, and other causes (Yasuri & Sojoodi, 2016: 1). Experiences from rural development theories indicate the inefficiency of some past rural development plans (Jahantigh et al., 2021: 91). Therefore, rural planners must seek new and innovative solutions for the sustainable development of villages (Izadi et al., 2023: 90). Creativity in villages can be considered one of the new approaches to rural development for production and living, as well as preventing the collapse of rural areas (Hajarian, 2021: 173). Creativity is an activity that develops throughout a person's life, and specific family environments and conditions play a role in the emergence of creative personalities (Simonton, 1991: 120). In support of the importance of rural creativity, Ardahala et al. (2016) propose three approaches for rural development: spatial development, economic

development, and the development of creativity and individual talents. Experiences show that special attention should be paid to the third approach for rural development, which is the formation of creativity in rural areas based on the capacities and culture of the village (Ardhala et al., 2016: 672). In this context, Balfour et al. (2018) believe that development based on rural creativity has the ability to strengthen interactive networks, leading to civic engagement, community empowerment, entrepreneurship, and creative transformation. Art schools, festivals, and local art venues provide opportunities for shared interactions that also enhance the creative capacity of rural communities (Balfour et al., 2018: 235).

In fact, within the concept of a creative village, the presence and concentration of producers, artists, scientists, students, and tradition-breakers are linked to the progress of the village. This group intensifies creativity and is attractive to others; they also create and shape the creative space of a village or region (Jahantigh et al., 2021: 96). Considering the points discussed, the development of creative fields is a suitable strategy for rural development because it can mobilize economic, social, human, cultural, and natural capital to achieve development goals. At the same time, the elevation of one does not negatively impact the other but rather becomes a growth factor for the other (Abrishami et al., 2020: 54).

RigiMotlagh et al., (2024) conducted a study on the impact of creativity indicators on the sustainable development of rural areas around cities (Case study: Zahedan in southeastern Iran). The results showed that eight indicators, including participation, efficiency and effectiveness, technology, innovation and initiative, the creative class (human capital), creative attractions, creative services, and diversity, can contribute to the realization of the creativity approach in rural and peri-urban areas. Einali et al., (2023) investigated the role of creative tourism in sustainable entrepreneurship in rural areas of northwestern Iran. The results indicated that among the studied indicators, the deepest impact of creative tourism was on investment in tourism activities and the development of public tourism infrastructure in the region.

Izadi et al., (2023) examined the effects and consequences of creative settlements on the development of rural areas (Case study: villages in Rashtkhvar County). The findings revealed a significant relationship between the effects and consequences of creative villages and rural development, with a correlation coefficient of 0.710 between the effects of creative settlements and development in rural areas. Thus, it can be concluded that the effects and consequences of creative settlements are

directly related to each other. Pazhouhan et al. (2023) presented a paradigmatic model for the development of rural creative tourism (Case study: tourism-targeted villages in Kermanshah Province). The results of inductive content analysis, through open, axial, and selective coding, identified 120 initial codes, 32 axial codes, and 6 factors. Ultimately, a model for rural creative tourism was designed and presented, in which “rural creative tourism” was selected as the core phenomenon influenced by causal factors. Contextual and intervening factors, along with the core phenomenon, shaped strategies for the development of rural creative tourism, leading to outcomes such as increased private sector investment, redirecting income from urban to rural areas, preventing migration to cities, increasing employment rates, returning to villages, and cultural development and a sense of cooperation in the region. Lu and Qian (2023) conducted a study on rural creativity for community revitalization in Bishan Village, China. By engaging with the literature on rural creativity, this study examines the vital role of creative practices in revitalizing rural mentalities and reforming social structures in rural areas. It suggests that creative initiatives intervene in and catalyze the reconstruction of local cultures and social relationships. Imani and Shadman (2022) evaluated and measured the factors influencing the realization of rural creative tourism in Sarein. The findings showed that all criteria and indicators of creative tourism in the central district of Sarein are in a favorable condition, and the results of confirmatory factor analysis also confirmed the model used in this study. The results indicated that physical, cultural, economic, and environmental indicators affect creative tourism. Jahantigh et al., (2021) analyzed the impact of creative village indicators on the sustainability of rural settlements in Sistan. The results showed that among the components, social (with an average of 3.45), economic (with an average of 3.37), and physical (with an average of 3.31) factors had the greatest impact on sustainability, while promotion and education (with an average of 3.46), flexibility (with an average of 3.43), and initiative (with an average of 3.42) had the greatest impact on rural creativity. Rogerson & Rogerson (2021) in a study titled “Creative Networks and the Making of Africa’s First UNESCO Creative City of Gastronomy”, explored the emergence of an African creative city and its membership in a creative network. The results indicate that the city has significant potential to become a creative city in the field of gastronomy. Key factors include human creativity in food production, culinary diversity, cultural and ethnic diversity, and public participation.

Richards (2020) researched the development of creative places, emphasizing the role of creative tourism. The results show that creative placemaking involves considering resources, meaning, and creativity, which are guided, enable participation, create space for creative expression, and develop a coherent narrative. O'Connor et al., (2020) note that only after a fundamental rethinking of a modernized conception and a new understanding of local possibilities can cities shift the discourse on creative cities. Li et al. (2020) examined the willingness of a new generation of farmers to participate in rural creative tourism. They found that the perceived impact of rural creative tourism on the new generation of farmers had a positive and significant effect on their willingness to engage in rural tourism development. Balfour et al. (2018) believe that development based on rural creativity can strengthen interactive networks, leading to civic engagement, community empowerment, entrepreneurship, and creative transformation. Art schools, festivals, and local art venues provide opportunities for shared interactions that also enhance the creative capacity of rural communities.

3. Methodology

The research method adopts a descriptive-analytical design, is applied in purpose, and follows a quantitative approach. The data collection was conducted through documentary and field-based methods. The statistical population consists of six villages located on the periphery of Birjand: Amirabad (1,847 households), Chekand (1,220 households), Hajiabad (2,078 households), Dastgerd (898 households), Shokatabad (143 households), and Aliabad Luleh (238 households), amounting to total of 6,423 households.

Using Cochran's formula, 384 households were determined as the sample size. The primary data collection instrument was a research-developed questionnaire consisting of six indicators and 26 variables (Table 1). The content and structural validity of the questionnaire were confirmed by academic experts and professionals in the field. Additionally, the reliability of the instrument was verified using Cronbach's alpha, yielding a coefficient of 0.73 across the various sections of the questionnaire, indicating acceptable internal consistency.

For data analysis, SPSS software was utilized, employing both the binomial test and the Friedman test to evaluate and interpret the collected data.

The city of Birjand, the capital of South Khorasan Province and the administrative center of Birjand Coun-

ty, is located in eastern Iran at at 59°13' east longitude and 32°53' north latitude, at an elevation of 1,470 meters above sea level. irjand is located approximately 481 kilometers from the capital of Razavi Khorasan Province, 458 kilometers from the capital of Sistan and Baluchestan Province, and 586 kilometers from the capital of Ker- man Province.

4. Findings

Assessing the Significance of the Status of Creativity Indicators in the Villages Peripheral to Birjand City

Given that the results indicated non-normal distribution, the binomial test was used to assess the significance of various indicators of creative tourism. In this test, the comparison was based on the value 3 according to the Likert scale. Accordingly, two groups were considered: less than 3 and greater than 3. The group less than 3 reflects the unfavorable status of rural creativity indicators, while the group greater than 3 reflects their favorable status.

Assessing the Significance of the Status of Economic Creativity Indicators

The binomial test results for economic creativity indicators reveal that the significance level of all indicators is less than 0.05, equal to 0.000, indicating their significance. The mean score, which is below the test value of 3, reflects the unfavorable status of economic creativity indicators in the villages peripheral to Birjand city (Table 2).

Assessing the Significance of the Status of Social and Cultural Creativity Indicators

The analysis of the binomial test results for social and cultural creativity indicators shows that all variables are significant at a level below 0.05. Evaluating the direction of significance using the mean value indicates that the status of this indicator is weak. This is because the lowest mean for the variable "creating social networks and collective collaborations to solve common problems" is 1.885, and the highest mean associated with "preserving and reviving cultural heritage, traditions, and local arts" is 2.154.

As a result, the status of social and cultural creativity indicators is assessed as unfavorable. The observed proportion in group one (score below 3) is consistently higher than that of group two (scores above 3) for all variables. This finding also confirms the unfavorable status of social and cultural creativity indicators (Table 3).

Assessing the Significance of the Status of Environmental Creativity Indicators

The result of the binomial test for environmental creativity indicators reveals that the significance level of all indicators is less than 0.05, equal to 0.000, indicating that the differences are statistically significant. Further-

more, the mean values for all indicators fall below the test value of 3, suggesting an unfavorable status for environmental creativity in the villages peripheral to Birjand city. This outcome confirms the weak performance of these villages in terms of environmental creativity (Table 4).

Table 1. Indicators and Variables of the Research

Indicators	Variables
Economic Creativity	Development of small and local businesses
	Organic farming
	Development of rural tourism
	Utilization of local resources to create added value and generate income
	Innovation in marketing and sales methods for rural products
Social and Cultural Creativity	Development of local organizations and community groups to improve quality of life
	Creation of social networks and collective collaborations to solve common problems
	Preservation and revival of cultural heritage, traditions, and local arts
	Use of participatory methods for decision-making and project implementation
	Utilization of indigenous culture as a source of inspiration for creating new products or services
Environmental Creativity	Development of cultural and artistic events to attract tourists and enhance local identity
	Use of sustainable methods for managing natural resources such as water, soil, and energy
	Development of environmental projects such as sustainable agriculture, afforestation, or recycling
	Innovation in reducing pollution and preserving biodiversity
	Development of innovative methods to increase productivity in agriculture and livestock farming
Technological Creativity	Creation of participatory management systems for natural resources
	Use of appropriate and low-cost technologies to improve rural life
	Development of technological solutions for agriculture, livestock, and small industries
Educational Creativity	Leveraging the internet and digital technologies to access larger markets
	Creation of educational programs tailored to the needs of rural communities
	Use of creative methods to teach new skills to rural youth and women
Creativity in Tourism	Development of local learning centers to enhance knowledge and capabilities of individuals
	Development of rural tourism using natural and cultural attractions
	Creation of unique experiences for tourists, such as staying in local homes or participating in traditional activities
	Use of storytelling and local narratives to attract tourists
	Development of infrastructure to support and attract tourists

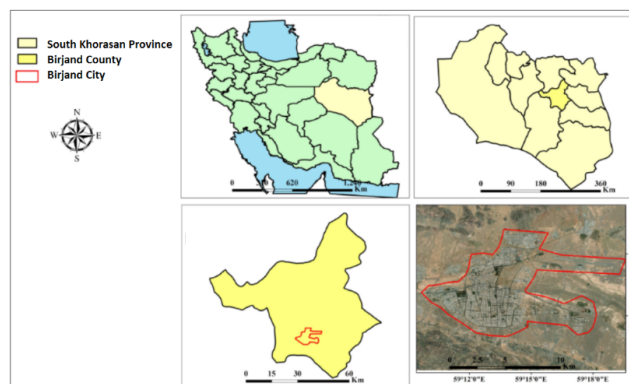


Figure 1. Study area. Reference: Authors, 2024

Table 2. Significance Assessment of the Economic Creativity Indicator Status

Variables	Ratio of Group One Observations (Less than 3)	Ratio of Group Two Observations (Greater than 3)	Tested Ratio	p-value	Average
Development of small and local businesses	0.87	0.13	0.50	0.000	2/461
Organic farming	0.82	0.18	0.50	0.000	2/513
Development of rural tourism	0.87	0.17	0.50	0.000	2/341
Utilization of local resources to create added value and generate income	0.81	0.19	0.50	0.000	2/354
Innovation in marketing and sales methods for rural products	0.86	0.14	0.50	0.000	2/172

Reference: Research results, 2024



Table 3. Measuring the Significance of the Status of the Social and Cultural Creativity Indicator

Variables	Ratio of Group One Observations (Less than 3)	Ratio of Group Two Observations (Greater than 3)	Tested Ratio	p-value	Average
Development of local organizations and community groups to improve quality of life	0.80	0.20	0.50	0.000	1/979
Creation of social networks and collective collaborations to solve common problems	0.82	0.18	0.50	0.000	1/885
Preservation and revival of cultural heritage, traditions, and local arts	0.77	0.23	0.50	0.000	2/154
Use of participatory methods for decision-making and project implementation	0.95	0.05	0.50	0.000	2/055
Utilization of indigenous culture as a source of inspiration for creating new products or services	0.81	0.19	0.50	0.000	2/026
Development of cultural and artistic events to attract tourists and enhance local identity	0.82	0.18	0.50	0.000	2/130

Reference: Research results, 2024



Table 4. Measuring the Significance of the Status of the Environmental Creativity Indicator

Variables	Ratio of Group One Observations (Less than 3)	Ratio of Group Two Observations (Greater than 3)	Tested Ratio	p-value	Average
Use of sustainable methods for managing natural resources such as water, soil, and energy	0.74	0.26	0.50	0.000	2/273
Development of environmental projects such as sustainable agriculture, afforestation, or recycling	0.82	0.18	0.50	0.000	1/935
Innovation in reducing pollution and preserving biodiversity	0.78	0.22	0.50	0.000	2/380
Development of innovative methods to increase productivity in agriculture and livestock farming	0.34	0.66	0.50	0.000	3/612
Creation of participatory management systems for natural resources	0.87	0.13	0.50	0.000	2/208

Reference: Research results, 2024



Assessing the Significance of the Status of Technological Creativity Indicators

The results of the binomial test for technological creativity indicators reveal that the significance level of all indicators is less than 0.05, equal to 0.000, indicating

their significance. The obtained mean (below the test average of 3) reflects the unfavorable status of technological creativity indicators in the villages peripheral to Birjand city (Table 5).

Table 5. Measuring the Significance of the Status of the Technological Creativity Indicator

Variables	Ratio of Group One Observations (Less than 3)	Ratio of Group Two Observations (Greater than 3)	Tested Ratio	p-value	Average
Use of appropriate and low-cost technologies to improve rural life	0.86	0.14	0.50	0.000	1/802
Development of technological solutions for agriculture, livestock, and small industries	0.82	0.18	0.50	0.000	2/169
Leveraging the internet and digital technologies to access larger markets	0.86	0.14	0.50	0.000	1/906

Reference: Research results, 2024



Assessing the Significance of the Status of Educational Creativity Indicators

The analysis of the binomial test results for educational creativity indicators shows that all variables are significant at a level less than 0.05. Evaluating the direction of significance using the mean parameter indicates that the status of this indicator is assessed as favorable. This is because the lowest mean for the variable “developing educational programs tailored to the needs of the rural community” is 3.911, and the highest mean for the variable “using creative methods to teach new skills to rural youth and women” is 3.958. As a result, the status of

educational creativity variables in the villages peripheral to Birjand city is favorable (Table 6).

Assessing the Significance of the Status of Creativity Indicators in Tourism

The result of the binomial test for tourism-related creativity indicators reveals that the significance level of all indicators is less than 0.05, equal to 0.000, confirming their significance. The obtained mean (below the test average of 3) reflects the unfavorable status of creativity indicators in tourism in the village’s peripheral to Birjand city (Table 7).

Table 6. Measuring the significance of the educational creativity Indicator

Variables	Ratio of Group One Observations (Less than 3)	Ratio of Group Two Observations (Greater than 3)	Tested Ratio	p-value	Average
Creation of educational programs tailored to the needs of rural communities	0.27	0.73	0.50	0.000	3/911
Use of creative methods to teach new skills to rural youth and women	0.19	0.81	0.50	0.000	3/958
Development of local learning centers to enhance knowledge and capabilities of individuals	0.22	0.78	0.50	0.000	3/917

Reference: Research results, 2024



Table 7. Measuring the significance of the status of the creativity Indicator in tourism

Variables	Ratio of Group One Observations (Less than 3)	Ratio of Group Two Observations (Greater than 3)	Tested Ratio	p-value	Average
Development of rural tourism using natural and cultural attractions	0.78	0.22	0.50	0.000	2/047
Creation of unique experiences for tourists, such as staying in local homes or participating in traditional activities	0.82	0.18	0.50	0.000	1/979
Use of storytelling and local narratives to attract tourists	0.86	0.14	0.50	0.000	1/945
Development of infrastructure to support and attract tourists	0.85	0.15	0.50	0.000	2/057

Reference: Research results, 2024



Significance and Prioritization of Creativity Indicators in the Villages Peripheral to Birjand City

To determine the significance of differences and the prioritization of creativity indicators in the villages peripheral to Birjand city, the Friedman test was used.

The results of the Friedman test for assessing the significance of differences in creativity indicators in the villages peripheral to Birjand city indicate that the examined indicators were significant at a level less than 0.05, equal to 0.000. Therefore, the creativity indicators in the

villages peripheral to Birjand city, based on the perspective of the statistical population, show significant differences and can have varying statuses. The chi-square value was also calculated to be 851.126.

The analysis of the mean ranks in the Friedman test (Table 9) concerning creativity indicators in the village’s peripheral to Birjand city indicates that the highest mean rank belongs to the educational creativity indicator, with a mean score of 5.62. In contrast, technological creativity ranks lowest with a mean score of 2.02.

Table 8. Significance and Prioritization of Creativity Indicators in the Villages Peripheral Birjand City

Measurement Indicators	Measurement Values
Significance Level	0.000
Chi-Square	851.126
Degrees of Freedom	5
Sample Size	384

Reference: Research results, 2024



Table 9. Prioritization of Creativity Indicators in the Villages Peripheral Birjand City (Friedman Test)

Indicators	Average	Rank
Economic Creativity	3.66	3
Social and Cultural Creativity	3.67	2
Environmental Creativity	2.50	5
Technological Creativity	2.02	6
Educational Creativity	0.62	1
Creativity in Tourism	3.53	4

Reference: Research results, 2024



5. Discussion

Creativity in rural areas plays a crucial role in promoting sustainable development and improving the quality of life. Villages, with their natural resources, rich culture, and unique lifestyle, provide a suitable platform for the emergence of new and creative ideas. This creativity can manifest in various fields such as agriculture, handicrafts, tourism, education, and technology, significantly contributing to the economic, social, and cultural advancement of rural settlements.

The current study aimed to assess and measure creativity indicators in the rural settlements surrounding Birjand city. In the economic domain, evidence shows that villagers have increased their productivity using modern technologies and sustainable farming methods. For example, organic farming or diversifying agricultural products has not only led to higher income but also

contributed to environmental conservation. Additionally, handicrafts and small businesses, which are deeply rooted in many villages, can become highly profitable products through innovation in design and marketing.

Furthermore, in the educational sphere, villages in the study area have initiated programs tailored to the needs of the rural community and used creative methods to teach new skills to rural youth and women, creating local learning centers to enhance knowledge and capabilities.

Tourism has emerged as another key avenue for rural creativity. The villages under study have been able to attract tourists with their natural and cultural attractions, which not only generates income but also helps preserve and strengthen the cultural identity of the villages. Moreover, the use of modern technologies such as renewable energy and the internet has contributed to the development of villages in the field of creativity. Overall,

creativity in the villages of the study area can lead to improved quality of life, preservation of local culture, and sustainable development. By supporting local initiatives, education, and access to modern technologies, villages can be helped to utilize their potential optimally and become dynamic and creative centers.

Nevertheless, the findings also suggest that rural creativity in this region is still in its nascent stage and requires sustained support for growth and transformation. Realizing long-term success will depend on coordinated efforts among the government, non-governmental organizations, the private sector, and local communities. By investing in creative solutions, a prosperous and resilient future can be envisioned for rural settlements.

This study's results align with previous research, including Izadi et al., (2023), who demonstrated that the outcomes of creative settlements are directly related to each other; Jahantigh et al. (2021) and Lu & Qian (2023), who emphasized the interconnectedness of creativity components.

Importantly, to the best of our knowledge, this is the first study conducted in the rural areas peripheral to Birjand city that evaluates creativity indicators within the current temporal and spatial framework.

Based on the findings of this study, the following measures are recommended to promote creativity in rural areas:

- Establishing joint urban-rural markets for selling rural products.
- Providing low-interest loans to support farmers and local artisans.
- Implementing pilot creative projects in rural areas.
- Developing transparent and accountable systems for resource management.
- Encouraging the participation of women and youth in local decision-making.
- Implementing environmental projects such as afforestation, recycling, and pollution reduction.
- Providing government facilities for creative projects such as tourism, agriculture, and handicrafts.
- Organizing workshops for women and youth in various fields such as agriculture, handicrafts, and tourism.

- Improving access to transportation, internet, clean drinking water, and electricity.

- Developing tourism infrastructure and creating unique experiences for tourists.

- Preserving and promoting cultural heritage, music, dance, and local arts.

- Establishing local markets for direct sales of agricultural products.

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Conflict of Interest

The authors declared no conflicts of interest.

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