Ferdowsi University of Mashhad

JRRP

# Journal of Research and Rural Planning

(Peer-reviewed)

Vol.13, No.4, Autumn 2024, Serial No.47



ISSN: 2783-2791

**Journal of Research and Rural Planning**
**Volume 13, No.4, Autumn 2024, Serial No. 47**

**Concessionaire:** Ferdowsi University of Mashhad
**Director:** Hamid Shayan
**Editor-in Chief:** Aliakbar Anabestani



**Editor Assistant:** Mahdi Javanshiri
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**Proofreading**: Editing Center of Lettrature
**Typesetting**: Elaheh Tajvidi
**Circulation**: 50

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website:http://Jrrp.um.ac.ir/ E-mail:Rplanning@um.ac.ir

Price: 20000 Rials Subscription:25 US$ (USA) 20 US$ (other)

**Indexing and Abstracting:**

ISC- SID- Magiran- Doaj- Index Copernicus

RICeST- ISI-Noormags- Googlescholar- Civilica- Oaji & etc.

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To prevent delays in publication, authors should follow these guidelines:

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8-2. Abstract: includes Structured abstracts (include: Purpose, Methodology, Finding, Practical implications, Original/value) of the article and keywords (3 to 6 words). The abstract should not exceed 300 words and should give a summary of the introduction, method of the research, findings and conclusion. In addition to the structured abstract, it is necessary to have a Persian extended abstract with 750 to 1000 words and include introduction, theoretical framework, methodology, discussion, conclusion and keywords in a way that contains information from the whole article and can be printed separately. Due to the fact that the article will be returned later in English, there is no need to translate the abstract into English.

8-3. Introduction: includes necessity of doing the research, unanswered questions about topics of the article and purpose of the research and the method of article for answering them.

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# Scientific Advisers Journal

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Volume 13, No. 4, Autumn 2024, Serial No. 47, Pp. 1-18
**eISSN: 2783-2007** **ISSN: 2783-2791**
http://jrrp.um.ac.ir

**Original Article**

# The Role of Vocational Education and Training (VET) in Preparing Rural Youth for the Labor Market in Isfahan Province, Iran

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**Abstract**

Purpose- The model of sustainable human development goes beyond sustainable development and has been adopted as the global development charter for the twenty-first century. Development should consider the needs of the current generation in addition to being sustainable. The impact of empowering members of society, particularly educated youth, can be significant. Skills-oriented and applied scientific training deals with aspects of human resource capabilities that are developed based on knowledge, skills, and attitudes. The implementation of applied scientific education in a way that is useful in the direction of economic development is critical. Assessing the need of society for a type of education that can be useful is important, but so is the method of providing that education.

Design/methodology/approach- One of the research's key questions is whether graduates of applied scientific education were successful in achieving their goals of economic development and job acquisition. The students at the Applied Science University are the focus of this research. The challenges of a lack of suitable businesses, as well as the existence of skill training centres' that operate in the three sectors of agriculture, services, and industry, are the reasons for choosing this province. They can help the people. A questionnaire-based survey is the research method used in this study. Students from scientific research centres and theoretical foundations were asked to answer questions on a questionnaire designed to achieve the research objectives. Finding- According to the surveys conducted, only 3.24% believe that the current skill education system is adjusted and designed with the characteristics of the rural community, as well as improving skills and improving social life conditions, respectively 4.04 and 3.99% of the most important motivations for studying in applied scientific universities based on the results of the analysis were based on the information collected from supplementary questionnaires. In addition to that, the examination of the efficiency and performance of the skill training system in different dimensions (curriculum and content, facilities and equipment) shows that "attachment and sense of belonging", "strengthening of urban behavior" and "desire of young people to transform from village to city" are three It is a case where the respondents believe that applied science education contributed to their improvement.

**Keywords:** Vocational Education and Training (VET), Rural Economic Development, Applied Science Education Centers, Isfahan Province, Iran.

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**How to cite this article:**
Ahangarha, M., & Badri, S.A. (2024). The role of Vocational Education and Training (VET) in preparing rural youth for the labor market in Isfahan Province, Iran. *Journal of Research & Rural Planning, 13*(4), 01-18.
http://dx.doi.org/10.22067/jrrp.v13i4.2406-1102

**Date:**
*Received: 01-07-2024*
*Revised: 13-08-2024*
*Accepted: 12-10- 2024*
*Available Online: 12-11-2024*

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## 1.Introduction

In recent years, the role of vocational education and training (VET) in preparing rural youth for the labor market has become increasingly important for sustainable economic development. The concept of sustainable human development extends beyond traditional notions of economic progress, emphasizing the need to address the needs of both current and future generations. This approach recognizes the pivotal role of educated youth in driving societal empowerment and economic advancement (Aleixo et al., 2020).

According to the United Nations' Sustainable Development Goals (SDGs), quality education is essential for achieving sustainable development. SDGs are a set of 17 interconnected goals designed to end poverty, protect the planet, and ensure peace and prosperity for all by 2030. Specifically, Goal 4 targets inclusive and equitable quality education for all, recognizing its critical role in fostering economic growth and reducing poverty. In this context, vocational education and training programs play a crucial role in equipping rural youth with practical skills that align with labor market demands (UNESCO, 2014).

Rural youth face unique challenges in accessing education and employment opportunities:

Limited access to VET programs: A recent study in Iran found that rural schools often lack the necessary infrastructure and resources to offer comprehensive VET programs, limiting young people's access to vocational training (Maqsoudi, 2022).

Skills mismatch: There is often a disconnect between the skills taught in VET programs and the demands of the labor market in rural areas. According to research, this mismatch can lead to high unemployment rates among rural youth graduates (Chauke, 2023), Entrepreneurship opportunities: Rural youth are increasingly turning to entrepreneurship as a career path. A study in Iran revealed that VET programs focusing on entrepreneurial skills can significantly increase the likelihood of rural youth starting their own businesses (Ebdali et al., 2023) and, digital literacy: With the growing importance of technology in the job market, VET programs in rural areas need to emphasize digital literacy skills. Research suggests that incorporating digital technologies into VET curricula can enhance employability prospects for rural youth (Khorasani et al., 2022).

Moreover, villages play a crucial role in increasing economic growth and supplying raw materials for the whole country:

Raw material supply: Rural areas are often rich in natural resources, including minerals, timber, and agricultural products. These resources are essential for industrial production and technological advancement, contributing significantly to national economic growth (Rahimi, 2022) , Economic multiplier effect: Investments in rural development can have a ripple effect throughout the national economy. For instance, a study conducted in Iran found that rural development programs increased GDP per capita by an average of 15% in participating regions (Khorasani, 2021), Job creation: Rural areas offer opportunities for employment in various sectors, including agriculture, manufacturing, and services. According to recent research, rural job creation has been shown to reduce urban-rural migration rates and promote balanced economic growth (Abrishami et al., 2018) and Infrastructure development: Improving rural infrastructure, such as roads and telecommunications, can enhance connectivity between rural and urban areas, facilitating the flow of goods, services, and ideas. This, in turn, contributes to overall national economic development (Jafari, 2022).

This study aims to investigate the impact of VET programs on rural youth employability in Isfahan Province, Iran. Specifically, it seeks to examine:

This study aims to investigate the impact of VET programs on rural youth employability in Isfahan Province, Iran. Specifically, it seeks to examine:

The factors influencing rural youth participation in VET programs, the perceived effectiveness of VET in preparing students for the job market, The alignment of VET curricula with local economic needs and the role of VET graduates in driving entrepreneurship and economic development in rural areas. The relationship between education, business, and the country's potential and real economic growth is luring potential human resources to the labor market (Maqsoudi, 2013).

The importance and urgency of this research stem from the fact that there are over three and a half million university students, and it should be

determined how productive and entrepreneurial they are.

In addition, the necessity of this research in Isfahan province stems from several critical factors:

Demographic challenges: Isfahan province faces significant demographic shifts, with many young people migrating to urban centers. This migration can lead to brain drain and economic stagnation in rural areas, highlighting the urgent need for effective VET programs to retain talent (Salehi et al., 2022), Economic diversification: The province's economy is heavily reliant on agriculture, necessitating the development of alternative industries and job opportunities. VET programs can play a crucial role in skill development for emerging sectors (Rahimi et al., 2023), Infrastructure gaps: Despite efforts to improve rural infrastructure, significant disparities remain between rural and urban areas in Isfahan province. Addressing these gaps through targeted VET initiatives can contribute to more equitable regional development (Jafari et al., 2023) and, Skill mismatch: Research indicates that there is a significant gap between the skills offered by VET programs in Isfahan province and the demands of the local labor market. This study aims to identify strategies to bridge this gap and improve employability prospects for rural youth (Khorasani et al., 2022).

By exploring these aspects, this research contributes to the broader discourse on the importance of VET in promoting sustainable rural development and improving the socio-economic prospects of rural youth. The findings of this study have implications for policymakers, educators, and stakeholders involved in rural development initiatives, highlighting the critical role of well-designed VET programs in fostering economic growth and social stability in rural regions (Katsande, 2016).

## 2. Research Theoretical Literature

Bodorkos and Pataki (2009) discuss the importance of forming and institutionalizing mutual opinions between society and universities in their study on the relationship between university and indigenous knowledge in Hungary. They introduce the PRA project and provide a report on it to support their argument.

Emadi and Abbasi (1997) examine the research being conducted in villages in their work "Independence Development, Development of Independence: Introduction and Review of the Book of Agricultural Research and Poor Villagers."

Sobhaninejad and Afshar (2007) emphasize the need for educational quality in the higher education system to be planned according to the needs of society and national goals. They suggest that aligning education with societal needs and goals will lead to more effective teaching and learning.

Fatima Akhtar (2023) describes the Skill India program, which offers multiple avenues for marketable expertise in areas such as agriculture, manufacturing and the service sector. As a result, it was found that the Skill India program has had a profound impact on business growth in rural areas. This has helped usher in a new crop of self-reliant, technically savvy and creative business leaders.

Mirza Mostafa (1987) concluded in his doctoral thesis that vocational education in Iran is male-centered, with female students showing less interest. He also found that students with lower average marks were more interested in vocational education, and those with more knowledge about vocational training were more likely to pursue it.

## 3. Research Methodology

Working students who attended various educational facilities at different levels while being supervised by the UAST make up the target population for this study. 350 of the 1500 students who received this online questionnaire through the educational registration system (Hamava) filled it out and sent it back. As a result, the questionnaire has a 23.3% return rate. Isfahan province has 29 applied scientific education centers, and 11,000 students are enrolled in these institutions for their scientific education. These facts are noteworthy.

Similar research projects, theoretical underpinnings, data and statistics, theses and dissertation titles, student comments, documentary and library resources (books, scientific articles, websites), as well as references to the UAST's educational vice-chancellor, are among the items needed for research. The theoretical underpinnings of relevant publications have been used to assess the degree of validity of study variables. The reliability of the questionnaire was also assessed using the Cronbach's alpha coefficient (Table 1).

**Table 1. Validity calculation of research variables**

| Variables | Cronbach's alpha |
|---|---|
| Motivation to study | 0.77 |
| Choosing applied scientific centers for study | 0.79 |
| Motivational factors for economic entrepreneurship | 0.77 |
| Motivational factors for social entrepreneurship | 0.87 |
| Motivational factors for environmental entrepreneurship | 0.86 |
| Motivational factors for institutional entrepreneurship | 0.89 |
| Skills needed to find a job | 0.87 |
| Effective ways to find jobs for graduates living in rural areas | 0.85 |
| Efficiency and performance of skill education system | 0.90 |

**Statistical tests used-** Depending on the situation, analysis of variance tests, Friedman tests, correlation statistics, consensus tables, and other statistical tools have been employed in addition to standard t-tests for data analysis, research target fulfillment, and question answering.

**The studied community-** The province of Isfahan is home to 29 active applied scientific centers. because these educational institutions serve both urban and rural areas. Isfahan province, home to roughly 5.6% of the nation's total population, is the third most populated province. It has long been recognized as an industrial province because it is home to significant and important industries including petrochemicals, steel, and refineries. Nuclear energy and cement comprise a large portion of the nation's industry, and they also served as the foundation for developing several small and medium-sized businesses in this province.

Like many other provinces, Isfahan Province's economy is centered on three industries: services, industry, and agriculture. The proportion of jobs in these industries may be what makes this province unique. Due to water scarcity issues, the agricultural industry in Isfahan Province is currently seeing a decline in prosperity, accounting for 10.9% of all employment in the province. Additionally, 43.7% of jobs are in the industry sector; however, this percentage declines annually and is replaced by services, which now account for 45.4% of jobs in the province's service sector. It is actually true that issues with water scarcity are causing agriculture to decline, and that stagnation in industry is causing industry to decline as well (Table 2 and Fig. 1).

**Table 2. The centres of Isfahan province and the number of students**

| Row | Name of applied scientific training centers | Number of students | Row | Name of applied scientific training centers | Number of students |
|---|---|---|---|---|---|
| 1 | Aran and Bidgol educational center | 728 | 16 | Isfahan Police Command Training Center (Ansarul Mahdi) | 228 |
| 2 | Tirana and Krone educational center | 165 | 17 | Mahan Sepahan Industrial Development Group Training Center | 507 |
| 3 | Golpayegan Educational Center | 225 | 18 | Isfahan Province Islamic Society of Workers Training Center | 863 |
| 4 | Mubarake educational center | 568 | 19 | Educational Center of the Red Crescent Society of Isfahan Province | 372 |
| 5 | Najafabad educational center | 598 | 20 | Isfahan Academic Jihad Training Center | 244 |
| 6 | Harand educational center | 536 | 21 | Educational Center of the Worker's House of the Islamic Republic of Iran, Organization of Isfahan Province | 455 |

| Row | Name of applied scientific training centers | Number of students | Row | Name of applied scientific training centers | Number of students |
|---|---|---|---|---|---|
| 7 | Alavije educational center | 154 | 22 | Educational Center of the Worker's House of the Islamic Republic of Iran, Organization of Kashan City | 558 |
| 8 | Zarin shahr educational center | 230 | 23 | Esfahan Province Justice Training Center | 653 |
| 9 | Mahabad educational center | 108 | 24 | Educational center of the cooperation organization of the municipalities of the province | 346 |
| 10 | Bank Melli educational center | 23 | 25 | Training Center of Iran Sepehr Company | 418 |
| 11 | Naein educational center | 12 | 26 | Training Center of Prestige land Iran Company (City Center) | 1112 |
| 12 | Khor-O-Biabanak educational center | 110 | 27 | Isfahan Zob Ahan Company Training Center | 371 |
| 13 | Education Center of Gaz Seke Company (Antique) | 565 | 28 | Educational Center of the Investment Development Group Company | 872 |
| 14 | Shahid Sayad Nezaj educational center | 476 | 29 | Educational Center of Holy Qur'an Kindergarten in Isfahan Province | 90 |
| 15 | Shahid Watanpour Aviation Training Center of Isfahan | 144 | 30 | **Total** | **11731** |

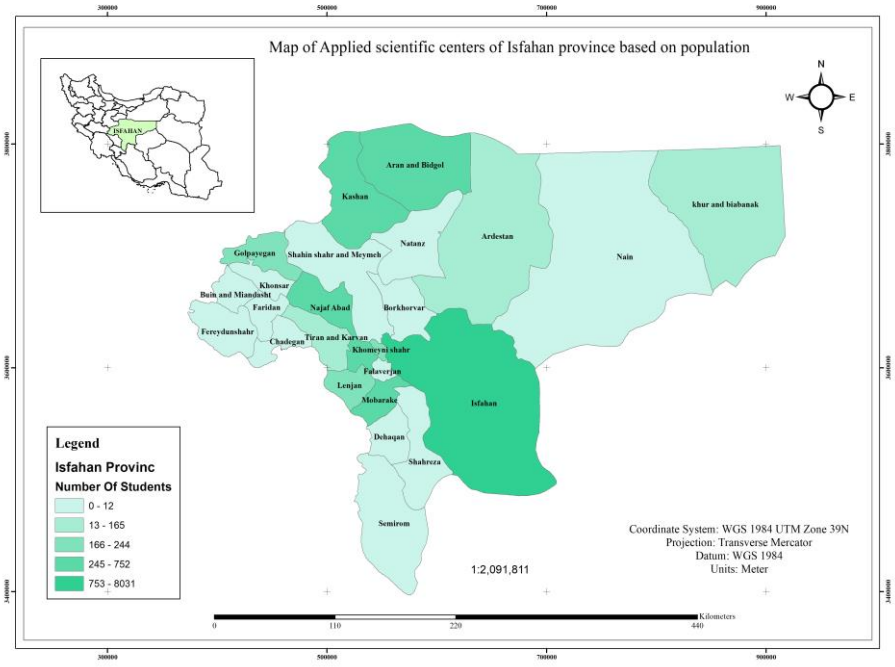


**Figure 1. Distribution of applied scientific canters of Isfahan province based on population**

## 4. Research Findings

The target community's attributes are as follows, based on the research's descriptive and analytical findings:

**Gender and marital status-** Of the respondents to this study's questionnaire, 42% of women were unmarried and 58% were married. 75% of men were married, compared to 25% who were single (Table 3).

**Table 3. Gender and marital status of respondents**

| Marital status | Men | Women |
|---|---|---|
| Single | 25% | 42% |
| Married | 75% | 58% |

**Age and Grade-** The proportional distribution of 32% male respondents and 18% female respondents in the age range over 41 indicates that more men than ever want to pursue further education at an applied scientific university and acquire skill training. The age group of 25 to 19 years old included the greatest group of women studying for an associate degree (36.7), while the age group of 40 to 36 years old had the largest group of men (38.1). The lowest group of both sexes, 1.6 for women and 1.7 for men over 50, indicates that female students prefer associate degrees over those of 1.6 for women and 1.7 for men over 50, indicating that female students prefer associate degrees over males at older ages.

Moreover, at the undergraduate level, women aged26 to 35 age range made up the largest group (42.9%), while women in the 50+ age bracket made up the smallest (1.4%). Men also had the greatest and lowest rates, with 33.6% in the age range of 41 to 50 and 6.4% in the age range of 25 to 19, respectively. This indicates that men are less inclined to continue their education while they are younger (Table 4).

**Table 4. Educational level of respondents**

| Grade | Age groups | Men | | Women | |
|---|---|---|---|---|---|
| | | Number | % | Number | % |
| Advanced Diploma | 19-25 | 12 | 10.2 | 18 | 37.7 |
| | 26-35 | 34 | 28.8 | 10 | 20.4 |
| | 36-40 | 45 | 38.1 | 11 | 22.4 |
| | 41-50 | 25 | 21.2 | 7 | 14.3 |
| | 50+ | 2 | 1.7 | 3 | 6.1 |
| Master | 19-25 | 8 | 6.4 | 8 | 16.3 |
| | 26-35 | 36 | 28.8 | 21 | 42.9 |
| | 36-40 | 30 | 24.0 | 12 | 24.5 |
| | 41-50 | 42 | 33.6 | 6 | 12.2 |
| | 50+ | 9 | 7.2 | 2 | 4.1 |

**Classification of study fields-** According to the data collected from the surveys, a significant 77% of respondents are employed in social service fields, while 5.2% are involved in culture and art-related professions. Only 0.6% are in agriculture, with the remaining 17.2% working in industry-related sectors (see Table 5).

The social service category encompasses a wide range of study areas, including hospitality, ceremony management, registration law, and supervision of commercial complexes, among others. This field is known for attracting a diverse range of students and offering valuable skill-building opportunities.

The industry group, which includes disciplines like welding inspection technology engineering and industrial production technology engineering, is the second most popular category among students. The culture and arts sector, which includes fields such as handicrafts, carpet weaving, and tourism, comes in third.

Interestingly, students in rural areas show less interest in agriculture-related fields because of several reasons: lack of specialized training, shortage of opportunities for self-realization, urbanization trends, (Girdziute, Laura, et al. 2022), financial barriers and limited access to modern amenities (Yami, Mastewal, et al, 2019). However, there are numerous disciplines within this category that offer employment opportunities in rural areas, such as horticultural technology engineering, greenhouse production, and rural development.

**Table 5. Relative distribution of respondents in the four educational groups**

| Classification of study fields | Number | Percentage |
|---|---|---|
| Social service | 265 | 77.00 |
| Culture and art | 18 | 5.2 |
| Agriculture | 2 | 0.6 |
| Industry | 59 | 17.2 |

**Employment status-** Regarding the respondents' work situation, Table 6 indicates that 71.9% were employed and 28.1% were unemployed. According to these findings, most working students felt that to advance in their careers and develop their academic and university-level skills, they needed to continue their education in skill-related subjects. However, only 2.9% and 45% of the working students expressed slight and moderate job satisfaction, respectively, whereas over 43% of them expressed high and very high levels of employment satisfaction (Table 7).

**Table 6. Employment status of the respondents**

| Employment status | Number | Percentage |
|---|---|---|
| Unemployed | 98 | %28/1 |
| Employed | 251 | %71/9 |
| Total | 349 | 100 |

**Table 7. Respondents' level of satisfaction with their jobs**

| level of satisfaction | Number | Percentage |
|---|---|---|
| Very low | 11 | 4.4٪ |
| Low | 23 | 9.2٪ |
| To some extent | 113 | 45٪ |
| High | 71 | 28.3٪ |
| Very high | 33 | 13.1٪ |

Consequences and results of studying in an applied scientific university

The most significant difference can be seen in comparing the results and the results obtained from studying in applied scientific higher education centres according to the respondents' employment status. Whether employed or unemployed, the respondents have shown different reactions to the items raised about the consequences and results of studying in an applied scientific university.

### *4.1. What factors have influenced the selection of applied scientific education centers for education?*

One aspect of this research involves evaluating the quality of education at applied scientific universities. This includes assessing the relevance of course topics, adherence to the curriculum set by teachers, detailed planning of the education, enrollment of students from unrelated fields, teacher experience, motivation of students through acceleration events, and skill improvement through internships.

The most significant findings from this evaluation are the lowest average scores, which are 2.85 for "enrollment of students from unrelated fields" and 3.45 for "motivation of students through acceleration events." Conversely, the highest mean scores were 3.94 for "adherence to the content framework set by teachers" and 3.89 for "improvement of skill level through internships". (Table 8)

**Table 8. Influential factors in choosing an applied scientific education center for study**

| Factors | Kind of Variable | Exactly agree | Agree | To some extent | Disagree | Exactly disagree | Average |
|---|---|---|---|---|---|---|---|
| Educational quality | No. | 65 | 131 | 100 | 35 | 17 | 3.55 |
| | % | 18.7 | 37.6 | 28.7 | 10.1 | 4.9 | |
| Matching the presented topics with the subject of the lesson unit | No. | 105 | 127 | 87 | 18 | 11 | 3.85 |
| | % | 30.2 | 36.5 | 25.0 | 5.2 | 3.2 | |
| Complying with the content framework set by the teachers | No. | 119 | 129 | 71 | 21 | 9 | 3.94 |
| | % | 34.1 | 37.0 | 20.3 | 6.0 | 2.6 | |
| Detailed planning of applied scientific university education | No. | 79 | 120 | 84 | 47 | 18 | 3.56 |
| | % | 22.7 | 34.5 | 21.1 | 13.5 | 5.2 | |
| The low level of the university due to the enrollment of students with unrelated fields | No. | 37 | 59 | 103 | 112 | 37 | 2.85 |
| | % | 10.6 | 17.0 | 29.6 | 32.2 | 10.6 | |
| Adequate experience of teachers | No. | 103 | 135 | 65 | 27 | 18 | 3.80 |
| | % | 29.6 | 38.8 | 18.7 | 7.8 | 5.2 | |
| Influencing students' motivation through acceleration events | No. | 44 | 130 | 124 | 36 | 13 | 3.45 |
| | % | 12.7 | 37.5 | 35.7 | 10.4 | 3.7 | |
| Improving the level of skills by carbine and internship units | No. | 11 | 148 | 48 | 20 | 20 | 3.89 |
| | % | 32.0 | 42.7 | 13.8 | 5.8 | 5.8 | |

## 1-What are the goals of studying at applied scientific education centers?

This research aims to explore the factors that motivate students to enroll in a university with a focus on applied sciences. To achieve this, a series of related questions were developed. The motivations being investigated include securing employment, increasing earning potential with a degree, enhancing economic prospects, pursuing studies in a field relevant to their career, applying practical knowledge, improving social conditions, honing skills, elevating living standards, advancing to a higher level with a degree, proximity to the university, lower tuition fees compared to Azad University, easier access to the job market, absence of desired programs at Azad University and Payam Noor, and admission without an entrance exam (Table 9).

**Table 9. The goals of studying in applied scientific education centers**

| Factors | Kind of Variable | Exactly agree | Agree | To some extent | Disagree | Exactly disagree | Average |
|---|---|---|---|---|---|---|---|
| getting a job | No. | 88 | 89 | 59 | 8 | 7 | 3.97 |
| | % | 35.1 | 35.5 | 23.5 | 3.2 | 2.8 | |
| obtaining a degree to increase their salary | No. | 43 | 68 | 78 | 37 | 24 | 3.28 |
| | % | 17.2 | 27.2 | 31.2 | 14.8 | 9.6 | |
| improving economic conditions | No. | 49 | 100 | 59 | 26 | 17 | 3.55 |
| | % | 19.5 | 39.8 | 23.5 | 10.4 | 6.8 | |
| studying in a job-related field | No. | 91 | 68 | 44 | 25 | 22 | 3.72 |
| | % | 36.4 | 27.2 | 17.6 | 10.0 | 8.8 | |
| making practical use of what they have learned | No. | 92 | 125 | 90 | 25 | 14 | 3.74 |
| | % | 26.6 | 36.1 | 26.0 | 7.2 | 4.0 | |
| improving social life conditions | No. | 122 | 136 | 66 | 13 | 11 | 3.99 |
| | % | 35.1 | 39.1 | 19.0 | 3.7 | 3.2 | |
| improving skills | No. | 130 | 135 | 58 | 17 | 8 | 4.04 |
| | % | 37.4 | 38.8 | 16.7 | 4.9 | 2.3 | |
| improving skills | No. | 79 | 111 | 92 | 51 | 15 | 3.54 |
| | % | 22.7 | 31.9 | 26.4 | 14.7 | 4.3 | |
| Obtaining a degree to go to another level | No. | 44 | 66 | 91 | 118 | 28 | 2.94 |
| | % | 12.7 | 19.0 | 26.2 | 34.0 | 8.1 | |
| the proximity of the university to the place of residence | No. | 60 | 77 | 68 | 100 | 42 | 3.04 |
| | % | 17.3 | 22.2 | 19.6 | 28.8 | 12.1 | |
| lower tuition fees than Azad University | No. | 69 | 88 | 91 | 66 | 33 | 3.27 |
| | % | 19.9 | 25.4 | 26.2 | 19.0 | 9.5 | |
| entering the labor market and finding a job more easily | No. | 49 | 104 | 104 | 66 | 25 | 3.25 |
| | % | 14.1 | 29.9 | 29.9 | 19.0 | 7.2 | |
| the absence of the desired field in Azad University and Payam Noor | No. | 52 | 69 | 66 | 120 | 41 | 2.92 |
| | % | 14.9 | 19.8 | 19.0 | 34.5 | 11.8 | |
| admission without an entrance exam | No. | 72 | 128 | 75 | 55 | 18 | 3.52 |
| | % | 20.7 | 36.8 | 21.6 | 15.8 | 5.2 | |

**3. To what extent do students and graduates of applied scientific universities need other skills in order to find a suitable job?**

In addition to formal education, an important aspect of this research is determining what skills students need to secure a suitable job. These skills include basic competencies such as literacy, numeracy, and technology proficiency, as well as interpersonal skills like teamwork, effective communication, and building customer relationships. Additionally, thinking skills such as problem-solving, critical thinking, creativity, reasoning, and systemic thinking are crucial. The development of personality traits like responsibility, work ethic, and management, as well as business skills including entrepreneurship, innovation, and job-specific skills, and social skills like citizenship and effective communication are also important factors to consider. It is worth noting that personality trait development has the highest average percentage at 4.42%, while

thinking skills have the lowest average at 4.23% (Table 10).

**Table 10. Skills needed to find a job**

| Factors | Kind of Variable | Very little | low | Partially | Much | Very much | average |
|---|---|---|---|---|---|---|---|
| Basic skills | No. | 4 | 1 | 45 | 143 | 154 | 4.27 |
| | % | 1.2 | 0.3 | 13.0 | 41.2 | 44.4 | |
| Interpersonal skills | No. | 3 | 1 | 37 | 152 | 152 | 4.30 |
| | % | 0.9 | 0.3 | 10.7 | 44.1 | 44.1 | |
| Thinking skills | No. | 6 | 0 | 46 | 151 | 144 | 4.23 |
| | % | 1.7 | 0.0 | 13.3 | 43.5 | 41.5 | |
| Development of personality traits | No. | 3 | 3 | 33 | 112 | 194 | 4.42 |
| | % | 0.9 | 0.9 | 9.6 | 32.5 | 56.2 | |
| Business skills | No. | 4 | 4 | 47 | 129 | 162 | 4.27 |
| | % | 1.2 | 1.2 | 13.6 | 37.3 | 46.8 | |
| Social skills | No. | 3 | 2 | 34 | 153 | 153 | 4.31 |
| | % | 0.9 | 0.6 | 9.9 | 44.3 | 44.3 | |

**4- How is the efficiency and performance of the skill training system in different types (curriculum and educational tools, facilities, and equipment)?**

The final question in our research focuses on the effectiveness and impact of the skills training system on the students at the applied scientific university. Key factors addressed in this question include the students' sense of belonging and attachment, the influence of the training on urban behavior, the aspiration of young individuals to develop rural areas into urban centers, the capacity for innovative thinking and practical application of skills, the generation of employment opportunities for skilled rural youth, the alignment of educational fields with the available job opportunities in rural communities, and the overall empowerment and self-sufficiency of rural youth through creative and entrepreneurial training.

Among the findings, it was observed that graduates exhibited the highest level of attachment and belonging to their place of residence, averaging at 3.82%. Additionally, they expressed that the skills training system had a positive impact on their urban behavior, with an average rating of 3.66%. However, 3.08% of respondents felt that the current skills education system is not adequately tailored to the needs of rural communities, while 3.24% believed that the fields of study do not align with the job opportunities available in rural areas (Table 11).

**Table 11. Efficiency and performance of skill education system**

| Factors | Kind of Variable | very much | Much | to some extent | Low | very low | average |
|---|---|---|---|---|---|---|---|
| Attachment and sense of belonging | No. | 130 | 85 | 79 | 16 | 26 | 3.82 |
| | % | 38.7 | 25.3 | 23.5 | 4.8 | 7.7 | |
| Strengthening urbanism behavior | No. | 84 | 125 | 87 | 26 | 21 | 3.66 |
| | % | 24.5 | 36.4 | 25.4 | 7.6 | 6.1 | |
| Young people's desire to turn the village into a city | No. | 74 | 120 | 92 | 36 | 23 | 3.54 |
| | % | 21.4 | 34.8 | 26.7 | 10.4 | 6.7 | |
| Power of ideation and creative ways to use skills | No. | 44 | 108 | 122 | 42 | 28 | 3.28 |
| | % | 12.8 | 31.4 | 35.5 | 12.2 | 8.1 | |
| Creating jobs for skilled rural youth | No. | 64 | 98 | 103 | 53 | 27 | 3.34 |
| | % | 18.6 | 28.4 | 29.9 | 15.4 | 7.8 | |
| | No. | 45 | 100 | 118 | 57 | 25 | 3.24 |

| Factors | Kind of Variable | very much | Much | to some extent | Low | very low | average |
|---|---|---|---|---|---|---|---|
| Matching the fields of learning with the existing jobs of the rural community | % | 13.0 | 29.0 | 34.2 | 16.5 | 7.2 | |
| Empowerment and self-reliance of rural youth | No. | 49 | 105 | 112 | 49 | 31 | 3.27 |
| | % | 14.2 | 30.3 | 32.4 | 14.2 | 9.0 | |
| Entrepreneurial training of rural youth | No. | 55 | 98 | 115 | 43 | 33 | 3.29 |
| | % | 16.0 | 28.5 | 33.4 | 12.5 | 9.6 | |
| Suitability of education system to rural society | No. | 37 | 90 | 120 | 56 | 41 | 3.08 |
| | % | 10.8 | 26.2 | 34.9 | 16.3 | 11.9 | |

## Conclusion

- **What factors have influenced the selection of applied scientific education centers for education?**

To answer this question, 8 items were designed based on the opinions of the respondents to these surveys. The non-parametric Wilcoxon statistic was used to consider the conditions and characteristics of the collected information (ordinal scale and non-normality of the data).

Based on the results, it can be said that there is no significant difference between the desired items and these factors in terms of gender, educational level, or employment status.

Of course, between male and female respondents in the third item, "Regarding compliance with the content framework set for lessons by teachers of applied science centers" and between employed and unemployed respondents in the first item, regarding "the educational quality of applied science center's being at the optimal level", with 95% confidence, a significant difference is visible (Table 12).

**Table 12. Wilcoxon test on the influencing factors in choosing to study in applied scientific education centres**

| Factor | Statistics | getting a job | Getting a certificate or a salary increase | Improving economic condition | Studying in a job-related field | Practical use of what has been learned | Improving social living conditions | Skill improvement | Improving living conditions |
|---|---|---|---|---|---|---|---|---|---|
| Gender | Chi-square | 1.853 | 1.302 | 4.457 | .202 | .498 | .109 | 1.043 | 1.220 |
| | Degrees of freedom | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | Degree of importance | .173 | .254 | .035 | .653 | .480 | .741 | .307 | .269 |
| Grad | Chi-square | 3.439 | .007 | 1.896 | 1.199 | .583 | 2.989 | 1.236 | .309 |
| | Degrees of freedom | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | Degree of importance | .064 | .931 | .169 | .274 | .445 | .084 | .266 | .578 |
| Employment status | Chi-square | 4.839 | 3.110 | 3.687 | .628 | 2.298 | .100 | 2.558 | .103 |
| | Degrees of freedom | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | Degree of importance | .028 | .078 | .055 | .428 | .130 | .752 | .110 | .748 |

- **What are the goals of studying at applied scientific education centers?**

The Wilcoxon statistic was utilized to assess participants' stated opinions on the items in question. The findings indicate that, across gender,

educational level, and employment status, there are no significant differences in preferences for the items. Additionally, a notable distinction was observed between employed and unemployed respondents regarding the proximity of the commuting route to the center of applied scientific education and place of residence, with 95% confidence (Table 13).

**Table 13. Wilcoxon test about the purpose of studying in applied science education centres**

| Factrs | Statistics | Getting a degree to go to another level | The proximity of the university road to the place of residence | Lower tuition than Azad University | Entering the labor market and finding a job easier | Absence of desired field in Azad and Payam Noor University | Admission without entrance exam |
|---|---|---|---|---|---|---|---|
| Gender | Chi-square | .103 | .893 | .190 | .571 | .002 | 4.484 |
| | Degrees of freedom | 1 | 1 | 1 | 1 | 1 | 1 |
| | Degree of importance | .748 | .345 | .663 | .450 | .965 | .034 |
| Grad | Chi-square | 1.175 | 3.480 | .461 | 1.141 | .010 | .296 |
| | Degrees of freedom | 1 | 1 | 1 | 1 | 1 | 1 |
| | Degree of importance | .278 | .062 | .497 | .285 | .919 | .587 |
| Employment status | Chi-square | .053 | 5.777 | .258 | 3.477 | .103 | .582 |
| | Degrees of freedom | 1 | 1 | 1 | 1 | 1 | 1 |
| | Degrees of freedom | .818 | .016 | .611 | .062 | .748 | .446 |

- **To what extent do students and graduates of applied scientific universities need other skills to find a suitable job?**

According to the data presented in the table, respondents feel that aside from technical training in their area of expertise, they must also possess a wide range of skills in order to thrive in the job market. The most highly valued skills for securing employment include personal development traits such as responsibility, work ethic, and leadership, as well as social skills like teamwork, effective communication, and building trust (Table 14).

**Table 14. T-Tech test is a sample of the skills needed to find a job**

| Required skills | T | Degrees of freedom | Average |
|---|---|---|---|
| Basic skills | 30.2 | 346 | 4.27 |
| Interpersonal skills | 32.6 | 346 | 4.30 |
| Thinking skills | 28.3 | 346 | 4.23 |
| Development of personality traits | 34.3 | 346 | 4.42 |
| Business skills | 27.8 | 346 | 4.27 |
| social skills | 32.7 | 346 | 4.31 |

It is interesting to note that the significant difference test of the listed skills in terms of different factors using the Wilcoxon statistic shows that except in the field of business skills (including entrepreneurship, innovation, and job skills), there is a difference between the opinions of the respondents only among employed and unemployed students (Table 15).

**Table 15. Wilcoxon test about the significant difference of required skills according to different factors**

| Factors | statistics | Basic skills | Interpersonal skills | Thinking skills | Development of personality traits | Business skills | social skills |
|---|---|---|---|---|---|---|---|
| Gender | Chi-square | .933 | .005 | .384 | 3.440 | .000 | .572 |
| | Degrees of freedom | 1 | 1 | 1 | 1 | 1 | 1 |
| | Degree of importance | .334 | .942 | .535 | .064 | .982 | .449 |
| Grad | Chi-square | 2.960 | 1.933 | .485 | 2.918 | 4.431 | 1.984 |
| | Degrees of freedom | 1 | 1 | 1 | 1 | 1 | 1 |
| | Degree of importance | .085 | .164 | .486 | .088 | .035 | .159 |
| Employment status | Chi-square | .647 | .157 | .097 | 3.091 | 1.536 | .147 |
| | Degrees of freedom | 1 | 1 | 1 | 1 | 1 | 1 |
| | Degree of importance | .421 | .692 | .756 | .079 | .215 | .701 |

- **How is the efficiency and performance of the skill training system in different types (curriculum and educational tools, facilities, and equipment)?**

When analyzing the effectiveness and outcomes of the vocational education system across various aspects (such as curriculum and resources), it becomes evident that respondents view "emotional connection and a sense of belonging," "enhancing urban behavior," and "the aspiration of youth to urbanize rural areas" as areas that can be enhanced through practical, scientific training (Table 16).

**Table 16. Average opinions about the performance of the skill training system**

| Factors | N | MEAN | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|
| attachment and sense of belonging | 336 | 3.82 | 1.218 | .066 |
| Strengthening urbanism behavior | 343 | 3.66 | 1.113 | .060 |
| Young people's desire to turn the village into a city | 345 | 3.54 | 1.136 | .061 |
| The power of ideation and creative ways to apply skills | 344 | 3.28 | 1.093 | .059 |
| Creating jobs for skilled rural youth | 345 | 3.34 | 1.174 | .063 |
| Matching the fields of learning with the existing jobs of the rural community | 345 | 3.24 | 1.101 | .059 |
| Empowerment and self-reliance of rural youth | 346 | 3.27 | 1.141 | .061 |
| Creative and entrepreneurial training of rural youth | 344 | 3.29 | 1.164 | .063 |
| Suitability of education system to rural society | 344 | 3.08 | 1.153 | .062 |

## 5. Discussion and Conclusion

The findings of this study shed light on the crucial role of Vocational Education and Training (VET) in preparing rural youth for the labor market and promoting sustainable economic development in Isfahan Province, Iran. The results are consistent with previous research highlighting the importance of VET in empowering young people and meeting the demands of the present generation (UNESCO, 2014; Cedefop, 2020).

One of the key findings of this study is the need for targeted support for graduate entrepreneurship to enhance the employability of VET graduates. This aligns with the work of Katsande (2016), who emphasized the significance of entrepreneurial training for rural youth in Zimbabwe. Our study extends this understanding by identifying specific measures, such as creating a fund to support graduate entrepreneurship, that can effectively bridge the gap between VET and successful job acquisition.

Moreover, the study underscores the importance of developing new and modern fields in agriculture and transformation industries to cater to the unique economic structure of Isfahan Province. This finding resonates with the research of Salehi (2011), who highlighted the need for VET to adapt to the evolving skill requirements of the labor market. By aligning VET with the demands of the local economy, this study offers a practical approach to fostering sustainable economic growth in rural areas.

However, the study also reveals challenges in the current VET system, such as the lack of alignment between learning fields and existing rural jobs. This echoes the concerns Maghsoodi (2013) raised regarding the mismatch between education and employment in Iran. Our findings suggest that addressing this disparity is crucial for maximizing the impact of VET on rural economic development.

From a theoretical perspective, this study contributes to the growing body of literature on the role of education in sustainable development (Aleixo et al., 2020). By demonstrating the potential of VET to empower rural youth and drive economic growth, this research reinforces the significance of human capital development in achieving sustainable development goals.

The practical implications of this study are far-reaching. Policymakers and educational institutions can leverage these findings to design targeted interventions that enhance the effectiveness of VET in rural areas. This may involve establishing entrepreneurship support programs, updating curricula to match local economic needs, and fostering collaboration between VET institutions and industry partners.

However, the study's limitations must be acknowledged. The focus on Isfahan Province may limit the generalizability of the findings to other regions with different economic and social contexts. Future research could explore the impact of VET on rural youth employability in diverse settings to provide a more comprehensive understanding of the topic.

This study makes a valuable contribution to the literature on VET and sustainable development by highlighting the potential of targeted interventions to prepare rural youth for the labor market. By aligning VET with the demands of the local economy and supporting graduate entrepreneurship, policymakers and educators can unlock the transformative power of education in driving sustainable economic growth in rural communities.

**Practical Implications-** The findings of this research have practical implications for improving vocational education and training (VET) in rural areas:

1. Aligning VET programs with the economic and employment needs of rural communities, focusing on developing modern fields in agriculture and transformation industries.
2. Providing targeted support for graduate entrepreneurship, including the establishment of an entrepreneurship support fund to facilitate their entry into the labor market.
3. Enhancing students' soft skills alongside specialized training, including personality, social, and business skills that are essential for success in the labor market.
4. Increasing the efficiency of the educational system by fostering a sense of belonging and attachment among students towards rural areas and strengthening their citizenship behaviors.
5. Establishing stronger connections and coordination between VET centers, local industries, and employers to ensure the alignment of educational programs with community needs.

By implementing these recommendations, VET in rural areas can effectively pave the way for the empowerment and sustainable employment of youth, as well as the sustainable economic development of rural communities.

**Acknowledgments**

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

**Authors′ contributions**

The authors equally contributed to the preparation of this article.

**Conflict of interest**

The authors declare no conflict of interest.

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*Journal of Research and Rural Planning*
Volume 13, No. 4, Autumn 2024, Serial No. 47, Pp. 1-18
**eISSN: 2783-2007** **ISSN: 2783-2791**
http://jrrp.um.ac.ir

**Original Article**

# نقش آموزش فنی و حرفه‌ای (VET) در آماده‌سازی جوانان روستایی برای بازار کار در استان اصفهان، ایران

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## چکیده مبسوط

### ۱. مقدمه

روستاها و روستاییان نقش حیاتی در برنامه‌ریزی کشور از جمله تولید مواد غذایی، حفظ ثبات سیاسی، تعادل جمعیت و حفظ ارزش‌های فرهنگی ایفا می‌کنند. توسعه روستایی برای پیشرفت ملی، با تأکید بر رشد کشاورزی، ضروری است. بیکاری و اشتغال ناقص دارای پیامدهای اقتصادی و اجتماعی هستند و اشتغال یکی از اولویت‌های توسعه محسوب می‌شود. سرمایه انسانی برای چالش‌های اقتصادی آینده حیاتی است و آموزش نقش مهمی در توسعه پایدار ایفا می‌کند. تکنولوژی تغییراتی در مهارت‌های مورد نیاز بازار کار ایجاد کرده است و دانشگاه‌ها نقش مهمی در آموزش مهارت‌های مورد نیاز بازار کار دارند. روستاها با جمعیت جوان خود نیروی محرکه اقتصاد کشور هستند، اما مهاجرت جوانان به شهرها چالش‌هایی را ایجاد می‌کند. آموزش، تجارت و رشد اقتصادی به هم پیوسته هستند و دانشگاه‌های علمی کاربردی نقش مهمی در آموزش مهارت‌های مورد نیاز بازار کار دارند. علاوه بر موضوع کمبود آب و معیشت کشاورزان و مسائل زیست‌محیطی، استان اصفهان دارای بافت روستایی-شهری و روستاهای متعددی است و سهم بالایی از افراد بیکار با تحصیلات تکمیلی را داراست. به طوری که ۵۰ درصد از افراد بیکار با تحصیلات دانشگاهی در شهر اصفهان حضور دارند. بنابراین، لزوم توجه به آموزش و مهارت‌آموزی در این استان و تناسب آن در تعادل عرضه و تقاضای نیروی کار از اهمیت بسیار بیشتری برخوردار است.

### ۲. مبانی نظری تحقیق

شناسایی عوامل مؤثر در انتخاب دانشگاه علمی کاربردی، بررسی تأثیر عوامل مؤثر بر انتخاب دانشگاه علمی کاربردی و کارایی و عملکرد سیستم آموزش مهارت در ابعاد مختلف (برنامه درسی و محتوا، امکانات و تجهیزات) و همچنین میزان نیاز دانشجویان دانشگاه علمی کاربردی به مهارت‌های اضافی برای یافتن شغل مناسب، از جمله سؤالات اساسی این تحقیق است. علاوه بر این، تا چه حد دانشجویان و فارغ‌التحصیلان دانشگاه علمی کاربردی توانسته‌اند با آموزش علمی کاربردی بر توسعه کارآفرینی و ایجاد اشتغال در مناطق روستایی تأثیر بگذارند.

### ۳. روش تحقیق

داده‌های مورد نیاز در این تحقیق شامل داده‌های ثانویه (آمار و اطلاعات رسمی)، داده‌های اولیه (که با استفاده از روش پرسشنامه به دست می‌آیند) و اسناد و مدارک موجود در زمینه موضوع تحقیق در تحقیقات دیگر می‌باشد. جامعه هدف این تحقیق متشکل از دانشجویان شاغل است که در مراکز آموزشی مختلف تحت نظارت دانشگاه علمی کاربردی تحصیل کرده‌اند. این پرسشنامه به صورت آنلاین برای ۱۵۰۰ دانشجو از طریق سیستم آموزشی دانشگاه ارسال شد و ۳۵۰ نفر آن را تکمیل و بازگرداندند. بنابراین، نرخ بازگشت پرسشنامه ۲۳.۳٪ است. لازم به ذکر است که تعداد مراکز آموزش علمی کاربردی در استان اصفهان ۲۹ مرکز است و یازده هزار دانشجو در مراکز علمی کاربردی استان اصفهان مشغول به تحصیل هستند. اطلاعات مورد نیاز برای تحقیق شامل فعالیت‌های پژوهشی مشابه، مبانی نظری، آمار و اطلاعات، عناوین پایان‌نامه‌ها و رساله‌ها، نظرات دانشجویان، منابع اسنادی و کتابخانه‌ای (کتاب‌ها و مقالات علمی، وب‌سایت‌ها) و همچنین معاونت دانشگاه علمی کاربردی است. برای تعیین سطح اعتبار متغیرهای تحقیق، از مبانی نظری کارهای مرتبط استفاده شده است. ضریب آلفای کرونباخ نیز برای بررسی سطح پایایی پرسشنامه استفاده شد. اقتصاد استان اصفهان، مانند بسیاری از استان‌های دیگر، در سه بخش کشاورزی، صنعت و خدمات متمرکز شده است و شاید ویژگی متمایز آن به سهم این بخش‌ها در اشتغال مربوط می‌شود. بخش کشاورزی در استان اصفهان به دلیل مشکلات کمبود آب رو به کاهش رونق است و سهم فعلی آن در اشتغال کل استان برابر با ۱۰.۹ درصد است.

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## ۴. یافته‌های تحقیق

توزیع نسبی ۳۲ درصد از پاسخ‌دهندگان مرد در گروه سنی بالای ۴۱ سال در مقایسه با ۱۸ درصد از پاسخ‌دهندگان زن در این گروه، نشانه‌ای از تمایل بیشتر مردان به ادامه تحصیل در دانشگاه علمی کاربردی و دریافت آموزش مهارت است. در میان افرادی که در مقطع کاردانی مشغول به تحصیل بودند، بیشترین گروه زنان در گروه سنی ۲۵ تا ۱۹ سال ۳۶.۷ و بیشترین گروه مردان در گروه سنی ۴۰ تا ۳۶ سال ۳۸.۱ بود. کمترین گروه بالای ۵۰ سال در هر دو گروه به ترتیب ۱.۶ و ۱.۷ برای زنان و مردان است که نشان‌دهنده ترجیح دانشجویان زن برای مقطع کاردانی در مقایسه با مردان در سنین بالاتر است. بر اساس اطلاعات به دست آمده از پرسشنامه‌ها، ۷۵.۷ درصد از پاسخ‌دهندگان در رشته خدمات اجتماعی تحصیل می‌کنند که این رشته را نسبت به سه رشته دیگر برتری می‌دهد. همچنین، بیشترین تعداد افرادی که شاغل بودند و به پرسشنامه این تحقیق پاسخ دادند، تا حدودی از شغل خود رضایت داشتند.

## ۵. بحث و نتیجه‌گیری

پاسخ‌دهندگان معتقدند که علاوه بر آموزش مهارت در رشته تحصیلی خود، باید تمامی مهارت‌های دیگر را برای موفقیت در بازار کار کسب کنند. علاوه بر این، در مورد کارایی و عملکرد سیستم آموزش مهارت در زندگی دانشجویان دانشگاه علمی کاربردی، در میان فارغ‌التحصیلان، بیشترین درصد احساس تعلق و وابستگی به محل سکونت خود را داشتند، علاوه بر اعتقاد به اینکه سیستم آموزش مهارت رفتار شهری آنها را تقویت می‌کند. در مجموع، تعداد کمی از پاسخ‌دهندگان، سیستم آموزش مهارت فعلی را از نظر تناسب با ویژگی‌های جامعه روستایی بسیار پایین ارزیابی کردند، زیرا به نظر آنها، زمینه‌های یادگیری در موضوعات مختلف با زمینه‌های شغلی در جامعه روستایی ارتباط چندانی ندارد.

**کلیدواژه‌ها:** آموزش فنی و حرفه‌ای (VET)، توسعه اقتصادی روستایی، مراکز آموزش علمی کاربردی، استان اصفهان، ایران.

## تشکر و قدرانی

پژوهش حاضر حامی مالی نداشته و حاصل فعالیت علمی نویسندگان است.

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**How to cite this article:**
Ahangarha, M., & Badri, S.A. (2024). The role of Vocational Education and Training (VET) in preparing rural youth for the labor market in Isfahan Province, Iran. *Journal of Research & Rural Planning, 13*(4), 01-18.

http://dx.doi.org/10.22067/jrrp.v13i4.2406-1102

**Date:**
*Received: 01-07-2024*
*Revised: 13-08-2024*
*Accepted: 12-10- 2024*
*Available Online: 12-11-2024*

*Journal of Research and Rural Planning*
Volume 13, No. 4, Autumn 2024, Serial No. 47, Pp. 19-38
**eISSN: 2783-2007** **ISSN: 2783-2791**
http://jrrp.um.ac.ir

**Original Article**

# Rethinking Rural Development: Analyzing Paradigmatic Intersections in Iran's Spatial Planning Projects

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## Abstract

**Purpose-** The ongoing research endeavors to identify and critically analyze the paradigmatic rural development model embedded within Iran's spatial planning frameworks. As innovative philosophical perspectives in rural development emerge, the necessity of examining and understanding the foundational principles guiding these initiatives has become increasingly vital. This importance is recognized from a theoretical perspective and in practical efficiency and effectiveness, particularly relevant for geographers engaged in spatial analysis.

**Design/methodology/approach-** The research aims to contribute valuable insights to enhance rural development strategies and inform effective spatial planning in Iran by exploring these dimensions. The research strategy uses a mixed-methods approach, allowing for the selection of various methods that are aligned with the overall research objectives. Initially, the qualitative content analysis method was employed. Data collection utilized several tools, including observation, document analysis, and questionnaires. A non-probability sampling technique was applied, and one document was selected from each of the nine study areas. Researchers needed to consider multiple criteria during judgmental sampling, such as clustering levels, time units, geographic units, and the number of document samples, alongside consultations with academic experts. The document analysis, grounded in qualitative content analysis, aimed to objectify findings.

**Findings-** The research revealed that critical characteristics of the paradigmatic model for rural development in the provincial SSP include "objective ontology," "positivism epistemology," "Separate praxis," and "ethics." The findings indicate that the degree of alignment between the selected SPP and the paradigmatic model of retrogressive rural development is rated at 3.73. This score suggests that the retrogressive perspective remains dominant despite advancements in "ideological" and "institutional" reforms.

**Originality/value-** Consequently, the characteristics associated with the paradigmatic elements of rural development have regressed within the SPP framework.

**Keywords-** The dominant paradigm model, Rural development, Plans for improving Iran's territory, Regressive development, Nine regions.

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**How to cite this article:**
Mokhtari Karchegani, A., Tavakoli, M., Pourtaheri, M. & Navarro Valverde, F.A. (2024). Rethinking rural development: Analyzing paradigmatic intersections in Iran's Spatial Planning Projects. *Journal of Research & Rural Planning, 13*(4), 19-38.
http://dx.doi.org/10.22067/jrrp.v13i4.2410-1111

**Date:**
*Received: 12-10-2024*
*Revised: 28-11-2024*
*Accepted: 12-12- 2024*
*Available Online: 12-12-2024*

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## 1.Introduction

Rural development models have evolved significantly, reflecting planners' changing perspectives on understanding and addressing the complexities of rural life. Traditionally, these strategies relied heavily on exogenous models emphasizing external resources and expertise to determine development pathways. This approach often resulted in dependency, weakened local agencies, and insufficient community engagement in the development process. Consequently, many rural areas have become stagnant and disconnected from their unique socio-cultural contexts.

In contrast, contemporary paradigms emphasize endogenous development, prioritizing local resources and community participation (Olmedo & O'Shaughnessy, 2022). This approach fosters local ownership and empowerment, enabling communities to define their development paths. It encourages shared governance and resilience by building partnerships among local actors and aligns with complexity theory, which acknowledges the unpredictable nature of social change (Vercher et al., 2023).

Recent frameworks advocate for a territorial approach integrating each locality's specific economic, social, and environmental dimensions. This perspective recognizes that effective rural development must consider the unique characteristics of each territory, including its cultural and historical context. The "rural web" model illustrates this connection by highlighting how people, resources, and activities within a territory interact to enhance development outcomes. A robust local network can significantly improve the effectiveness of rural policies by leveraging local strengths and addressing specific needs.

Despite these advancements, challenges persist in various contexts, particularly in developing countries like Iran. After five decades of implementing spatial planning policies (SPPs), these plans have struggled to align with rural communities' social and spatial structures. Researchers such as Azkia & Dibaji Forooshnai (2016) argue that the rural sector still needs to achieve its appropriate place in the development planning process. The shortcomings of the current paradigmatic model in Iran's SPP indicate a significant gap in the theoretical foundations necessary for effective policymaking. Zahedi et al. (2013) emphasize that rural development planning in Iran lacks a fundamental theory, leading to insufficient progress in improving the living conditions of rural communities. The absence of a oherent theoretical framework has resulted in inefficient policy implementation and a lack of comprehensive rural development plans. Amani et al. (2020) also highlight that the planning system has not adequately considered paradigmatic demarcation in formulating rural development policies, significantly reducing the effectiveness of research projects at the village level. As Ahmadi Shapourabadi & Mottaghi (2022) point out, insufficient theoretical and intellectual reflection has been on the cognitive foundations necessary to support rural development policymaking since the Islamic Revolution.

Identifying a transparent paradigmatic model for rural development in Iran's SPP is essential to address these issues. Researchers argue that resolving this intellectual confusion is crucial for revitalizing villages from current crises and returning them to their natural growth cycles. The literature review suggests that addressing planning and policy formulation gaps is vital for improving rural development outcomes. Without a coherent theoretical framework guiding these initiatives, efforts will likely face persistent challenges that hinder progress (Mokhtari Karchegani et al, 2020).

The analytical framework of this study focuses on understanding the intellectual paradigm of rural development within Iranian spatial planning. Historical studies reveal three dominant paradigms: exogenous rural development, endogenous rural development, and neo-endogenous rural development. Each paradigm offers distinct perspectives on understanding rural dynamics and emphasizes different approaches to fostering growth. For a comprehensive analysis of these paradigms, one must examine four main elements: ontology, epistemology, praxis, and ethics. This review clarifies the status of these elements within the dominant paradigmatic model of rural development in Iran's SPP while providing an optimal model from the researcher's perspective.

The synthesis aims to elucidate the philosophical foundations of three principal approaches to rural development: exogenous development, classical

endogenous development, and endogenous development. By integrating theoretical frameworks with practical implications, this study seeks to fill existing gaps in the literature regarding the influence of rural development paradigms on spatial planning (SPP), particularly within the context of Iranian geography. This methodology enhances the comprehension of rural development frameworks that have yet to be explored in academic discussions.

Consequently, the shift from exogenous to endogenous models marks a significant turning point in the discourse on rural development. Contemporary paradigms focusing on local resources and community participation offer pathways toward sustainable growth tailored to specific community needs. However, these efforts may continue to falter without addressing theoretical shortcomings in contexts such as Iran's SPP. Identifying the coordinates of the paradigmatic model can illuminate various dimensions of projects that foster effective policies, empowering local communities and enhancing their resilience to global challenges. This research aims to contribute to academic discourse and inform practical strategies that can revitalize rural areas through informed policymaking based on solid theoretical frameworks.

## 2. Research Theoretical Literature

### *2.1. Paradigmatic elements and SPPs: A conceptual framework*

A paradigm encompasses the shared beliefs, values, and techniques a scientific community utilizes, serving as a standard for conducting research (Kuhn, 1962). Leavy (2014) likens paradigms to colored sunglasses that influence perception in research practices. Philosophers of science identify two main perspectives on paradigm composition. Lincoln & Guba (1985) assert that a paradigm consists of four core elements: ontology, epistemology, methodology, and axiology. Conversely, Leavy (2014) presents a more fluid understanding, positioning paradigms alongside ontology and epistemology while emphasizing philosophical, practical, and ethical dimensions .

This study aligns with Lincoln & Guba's (1985) framework, categorizing paradigms as philosophical wholes composed of ontology, epistemology, praxis, and ethics. Including praxis and ethics reflects their broader conceptual scope compared to methodology and axiology. Praxis connects theory to practice, while ethics encompasses moral considerations beyond traditional axiological frameworks (Figure 1).

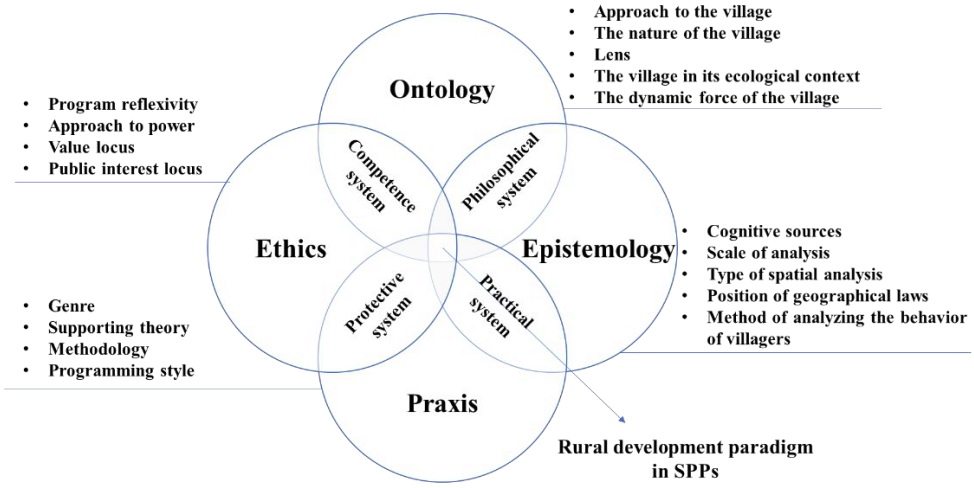


**Figure 1. The Framework of the Paradigmatic Model of SPP Evaluation**

Ontology is a foundational aspect of research paradigms, focusing on the nature of phenomena that constitute reality (Scott & Usher, 2004). It encompasses beliefs about social reality, addressing what can be known and how knowledge is constructed (Leavy, 2014). Guba & Lincoln (1998) articulate this inquiry by asking, "What is the form and nature of reality? And what is there to

know about it?" In qualitative research, knowledge-making is viewed as a dynamic and productive process. Truth is not an absolute entity waiting to be discovered; it is contextual and multifaceted. This perspective values subjectivity and redefines objectivity by acknowledging one's value system (Hesse-Biber et al, 2004). Such an ontological framework positions rural development as a qualitative reality, interpreting villages as social constructs shaped by complex human-environment interactions.

Epistemology further examines how knowledge about these phenomena is obtained. While ontology asks, "What can be known?" epistemology queries, "What knowledge is valid?" Sol and Heng (2022) define epistemology as a philosophical belief system that explores the nature of knowledge generated during research. Researchers engage in scientific inquiry while recognizing that their theoretical and practical interests influence their findings (Bresler, 2006). This approach challenges traditional notions of neutrality, positioning participants as co-creators of knowledge. In rural development studies, the question of valid knowledge remains contentious among geographers. However, they can draw from diverse knowledge sources, including intuitive, formal, logical, and empirical knowledge (Mokhtari Karchgani et al., 2020).

Praxis encompasses the actions arising from the dynamic interplay between theory and practice, facilitating experiential learning through a reciprocal process. Defined as an accepted practice or custom, praxis transforms ideas into action. Freire (1972) emphasizes that praxis involves reflection and action aimed at societal transformation. He asserts that understanding the world necessitates a commitment to creating a more equitable society. Central to praxis is integrating theory and practice, as articulated by Ellison & Langhout (2020), who note that praxis embodies interdependence rather than separation. White (2007) further describes praxis as ethical, self-conscious, and accountable action, encompassing knowing, doing, and being. In rural development, praxis focuses on the theory-practice nexus to foster experiential learning and skill development to generate positive change in rural contexts. The actions and designs of rural geographers exemplify their spatial praxis, contributing to their knowledge and enhancing their capacity to effect transformative changes in rural areas (Bruckmeier & Tovey, 2008).

Ethics serves as a critical bridge among ontology, epistemology, and praxis in research, ensuring the integrity of scientific inquiry. David (2015) define ethics as evaluating right and wrong conduct in research, emphasizing respect for participants, data, and outcomes. Central to ethical considerations are three key issues: ethics, values, and reflexivity. Researchers must contemplate the social implications of their work, particularly when involving human subjects, and be mindful of data confidentiality and the potential impact of their findings. Values in research relate to the researcher's ontological and epistemological choices, including the research's public utility and the inclusion of marginalized populations. Reflexivity involves recognizing the influence of power dynamics and biases throughout the research process (Finlay, 2002). This self-awareness is essential for promoting social justice within research.

Ethics encourages planners to critically assess underlying assumptions in development plans and consider ethical implications during implementation in rural development contexts. By integrating ethical considerations into their frameworks, researchers can better navigate the complexities of rural development while fostering equitable outcomes for all stakeholders. Thus, ethics emerges as a vital discourse in rural development research paradigms, guiding researchers in their commitment to ethical practices and social responsibility.

### *2.2. Bridging Paradigms and Practices*

Exploring rural development paradigms has emerged as a significant yet underexamined philosophical topic within rural geography. Existing literature indicates that while foundational studies have contributed to this area, a comprehensive understanding of the intellectual frameworks underpinning rural development still needs to be improved (Dower, 2013; Guinjoan et al., 2016). Scholars such as Healy (2004), Kay (1998), Murdoch (2000, 2003), Nelson (1984), Shortall (2008), and more recently, Yang and Qian (2023) have laid the groundwork for analyzing the trajectory of rural development. Notable contributions from Ambrosio-Albalá and Bastiaensen (2010), Cejudo and Navarro (2020),

and Scott et al., (2019) further elucidate the evolution and implications of various paradigms that shape rural development strategies.

Despite these contributions, a critical gap exists in global studies regarding the philosophical frameworks of rural development paradigms. While individual studies have examined specific aspects, this research distinguishes itself by adopting a philosophical approach to paradigm analysis, setting it apart from existing global investigations. The OECD project highlights this distinction by examining the interplay between rural development paradigms and the LEADER initiative, revealing significant methodological shortcomings in prior studies (Cei et al., 2018).

Recent literature increasingly supports integrating endogenous development into rural programs, emphasizing the need for a nuanced understanding of specific components within the rural development paradigm. This research categorizes studies into various themes, contributing to a broader understanding of rural development dynamics. Contributions from Douglas (2006) on neoliberal ideology's impact on rural development models and Olsen's (2008) exploration of realist ontology in empirical research illustrate the diverse philosophical perspectives informing current scholarship. Additionally, Low (2010) underscores the importance of historical analysis in shaping sociological viewpoints on rural development.

Dower (2013) introduces contemporary thought within the European Union, framing it as a new paradigm focused on enhancing citizens' quality of life while considering environmental relationships. Peterson et al., (2020) advocate for process planning theory in policymaking, emphasizing contextual analysis's role in successful rural development initiatives. The significance of territorial development emerges as a crucial theme in recent studies, with Marsden et al., (2005) emphasizing participatory approaches incorporating territorial perspectives.

Economic analyses within the rural development paradigm reveal that financial considerations extend beyond economic benefits. Vaswani et al., (2005) highlight the importance of extensive networks in fostering rural development. Burgos and Bocco (2020) propose multifaceted innovation approaches aligned with neo-endogenous principles.

Recent studies have highlighted the role of social learning and knowledge management. Mattner's (2006) examination of cognitive learning through farmer participation underscores the value of experiential knowledge in rural initiatives. Brookmeyer & Tovey (2008) address data scarcity and scientific uncertainty challenges, advocating for improved knowledge management practices.

Research on Iran's rural development paradigm indicates a significant oversight regarding philosophical perspectives among rural geographers. Previous studies by Behzadnasab (2000), Roknuddin Eftekhari (2004), and Zahedi et al., (2013) primarily focus on planning without addressing philosophical infrastructures. This study aims to fill this gap by identifying three critical paradigms: exogenous, classical, and neo-endogenous development. This research seeks to establish a relevant paradigmatic model for contemporary rural development practices that align with modern intellectual standards by transcending traditional boundaries.

In conclusion, this investigation addresses abstract concepts and emphasizes practical relevance by linking experimental plans to specific paradigms related to rural development. This connection represents an innovative contribution to the field, highlighting an area that has received limited attention globally and remains unrecognized mainly by Iranian rural geographers.

## 3. Research Methodology

### *3.1 Geographical Scope of the Research*

This research employs content analysis within a

One reason for selecting these documents is their placement within an institutional context characterized by a centralized state planning system and an oil-dependent economy, prepared and implemented under distinct conditions. This study focuses on the "Nine-Division Regionalization in the Sixth Development Plan (2019-2025)." According to the government performance report, after preparing the second national planning plan in 2000 and reviewing and operationalizing it until 2002, measures have been designed and initiated to prepare planning studies in the provinces since 2005. Despite these efforts, political considerations led the 12th government to attempt to secure approval for all provincial land planning plans from the "Supreme Council of Land Planning" in 2010.

### *3.2. Methodology*

The SPPs program is both valid and highly visible,

consistently attracting significant attention from academics and practitioners over the years. Its legal emphasis and upstream policy-making nature have had a substantial impact. SPPs hold great importance within the planning system due to their prescriptive and guiding nature; however, they have faced numerous challenges in determining more effective methods for their planning processes. For instance, in 2015, the National Program and Budget decided to incorporate a new study section titled "Management and Executive Practice" to gather suggestions aimed at improving control, monitoring, and evaluation mechanisms for development programs. Typically, this mechanism involved forming provincial working groups under the supervision of the Supreme Council for Provincial Land Planning, which would include managers and experts from government and public institutions. Nonetheless, a significant portion of the plans were approved prior to this period and lack this mechanism. Additionally, no actions have been taken to formalize these proposals into operational mechanisms.

mixed-methods approach to examine the features of the paradigmatic model of rural development across various projects. The methodology is grounded in an idealistic ontology with a constructivist nature and follows an interpretive epistemology. It posits that the dynamics of rural development in planning processes are influenced by the thoughts, values, and interpretations of individuals involved in program creation (Torabi et al., 2023). The study aims to discover the subjective meanings, orientations, and strategies attributed by project actors, thereby revealing deeper intellectual layers of rural development and clarifying the role of the dominant paradigm in spatial planning programs (SPP).

### *3.3. Data and information collection strategy*

The current research employs a methodology and data collection tools structured around the stages of qualitative content analysis. In the initial stage, the researcher will utilize observation and document study methods to identify categories and themes within SPP. This will involve a comprehensive review of documents and literature, including articles in both English and Farsi and relevant theses related to the subject. The indicators derived from the theoretical foundations and prior literature will be aligned with the SPP to extract the desired themes.

In the second stage, primary data collection methods, such as document observation, will be employed to construct a conceptual and semantic network of SPP's prevailing rural development paradigm. The third stage involves experts preparing a questionnaire to validate the conceptual findings and experimental model. The data necessary for analyzing the research question will be gathered using observation, document study (text), and questionnaire. Each tool serves a specific purpose based on its unique strengths.

### *3.4. Statistical population*

The statistical population for this study includes all SPPs in Iran, specifically those prepared up to the year 1403. The decision to select Iran's SPPs as the statistical population is based on several criteria:

- One of the most important reasons for choosing SPP is the lack of a scientific and coherent study about the role of their theoretical and philosophical foundations in guiding the planners' vision for the country's rural development.
- SPP is an upstream reference for the country's rural development.
- Selecting SPP based on the country's planning zoning helps us to identify the differences in the plans' attitudes towards rural development.

### *3.5. Sample, sample size, sampling method, and strategy*

The samples for this study were selected on a provincial scale, covering the period from 2004 to 2024. The project selection criteria depend on the researcher's access to relevant materials, leading to the use of available sampling methods. Consequently, documents will be utilized to estimate the sample size. Based on the collected documents, an effort will be made to select a representative document from nine study areas. In this context, SPPs from various provinces will be chosen using judgmental sampling, document accessibility, and consultations with academic experts (Table 1).

**Table 1. Research strategy for sampling the documents of SSP in Iran**

| Sampling method | Probability sampling type | Strategy for text unit sampling |
|---|---|---|
| Improbable | Multistage sampling | We are developing a sampling framework that clusters SPPs based on various criteria, including levels, time units, geographical units, and the number of samples from SPP documents across Iran's nine regions. This framework employs judgmental sampling, which is informed by our access to information and consultations with experts in the field. |

### *3.6. Analysis Method*

Qualitative content analysis was employed to analyze the selected projects. This method facilitates the subjective interpretation of textual data through classification, coding, theme identification, and conceptual model formation (Hsieh & Shannon, 2005). The conceptual framework of the paradigm model, derived from the theories of Lincoln and Guba (1985) and Leavy (2014), served as the foundation for the analysis. This framework acts as a manifesto throughout the research, revealing the fundamental aspects of rural development programs. The research process unfolds in three distinct stages.

In the first stage of initial coding, informed by the literature on the rural development paradigm, the characteristics of the four fundamental elements of the paradigm model were identified along with their subthemes. Based on the studied texts, the researcher identified four main elements of the paradigm: “ontology,” “epistemology,” “praxis,” and “ethics.” This classification aligns with the boundaries of the paradigm model presented by Lincoln and Guba (1985) and Leavy (2014). To enhance the reliability of the findings, an inter-rater method was utilized; researchers independently read and re-coded the data file, discussing the inclusiveness of their coding and interpretations in several meetings. The sensitivities surrounding the boundaries of the paradigm elements posed challenges to classification. In subsequent meetings, efforts were made to identify and eliminate overlaps in categories and subcategories. A final coding table detailing the characteristics of the paradigmatic elements of rural development in each project was then created.

To further enhance result validity, individual categories were weighted according to an evaluation protocol. Individual recording units were scored using a triangulation technique that involved surveying implementers, employers, and experts associated with each project. These scores were assigned on a Likert scale ranging from “1” to “5” and summed, implicitly incorporating a weighting system representing each category's frequency or intensity within individual projects. A standardized criterion was also established by averaging these categories to obtain theme scores for the four fundamental elements of the rural development paradigm and, ultimately, for the dominant paradigm model. A standard average value of “3” was set to compare categories.

The second step involved identifying projects that most and least exhibit characteristics of the dominant paradigm model. A comparative case analysis explored contexts where the existing paradigm model is dominant, examining barriers in each project and categorizing them by theme. To elucidate differences, notes taken during the research process were referenced, allowing for an assessment grounded in the scientific literature regarding the contribution of the paradigmatic model of rural development and spatial planning programs (SPPs).

Finally, the validity of measurements and reliability of assessments in qualitative content analysis were evaluated using a "face" validation method. According to Putt and Springer's guidelines (1989: 243), researchers reached consensus on categories regarding precise meaning, clarity, and non-overlapping nature through multiple meetings. Researchers achieved this consensus on themes and categories collaboratively throughout these discussions.

## 4. Research Findings

The findings of this research are grounded in a thorough content analysis of documents from the nine selected regions. Additional interviews with academic and executive experts were conducted to enrich these findings, allowing for a more nuanced understanding. Consequently, the results integrate insights from expert interviews with the content analysis of SPPs across these regions. This research approach systematically compares SPPs by themes and concepts, enabling the identification of critical characteristics and paradigmatic features of rural development for spatial comparison. By synthesizing these themes, the study aims to construct a grand narrative that encapsulates the overarching paradigm governing rural development within the country's SPPs.

A critical aspect of this investigation is its focus on articulating the paradigmatic story of rural development in SPPs. The researcher strives to present a cohesive narrative that maintains factual integrity regarding each research project. Rather than sequentially recounting the details of each project, the researcher integrates relevant facts within the thematic narrative. This approach not only preserves the coherence of the storyline but also enhances clarity for readers, preventing potential confusion.

The research findings indicate that, among the four themes and 17 main categories identified as a paradigm model of retrogressive rural development, selected SPPs were thoroughly analyzed. The overall compliance score of 3.73 suggests that regressive perspectives dominate despite ideological and institutional developments and reforms. This analysis reveals that the prevailing views on rural development remain entrenched, highlighting the need for further exploration and potential reform in planning practices. The persistence of these paradigms poses challenges to effective rural development strategies, emphasizing the importance of addressing underlying issues within the SPP framework.

The analysis of the findings across the four themes reveals distinct levels of prominence within the paradigm model. The "Separate praxis" theme stands out with the highest score of 3.99, indicating its significant manifestation. Following closely is "Confirmative Epistemology," which scored 3.83. The theme of "Grey Ethics" scored 3.77, while "Objective Ontology" contributed the least, with a score of 3.36, reflecting its more negligible impact (Table 2).

The analysis of the selected documents reveals that, in terms of objective ontology, the Spatial Planning Project (SPP) in Khuzestan province leads with a score of 4.85, followed by the Mazandaran Plan with a score of 4.2, and the Ardabil Plan with a score of 3.76. These findings indicate that these projects are the most closely aligned with the principles of objective ontology within the context of rural development.

The analysis indicates that Tehran province, with a score of 2.23, Fars province at 2.49, and Sistan and Baluchistan at 2.76, show the least compliance with the theme of positivism epistemology. In contrast, Khuzestan province leads with a score of 4.75, followed by Mazandaran at 4.45 and Ardabil at 4.21, reflecting the highest compliance in this theme. Conversely, Tehran's SSP scores are 2.93, while Sistan Baluchistan and Fars province follow with scores of 3.12 and 3.36, respectively, indicating lower alignment with positivism epistemology. The analysis of compliance with the theme of Separate praxis reveals that Khuzestan province's Spatial Planning Project (SPP) leads with a score of 4.96, followed closely by the Central plan at 4.69 and the Ardabil plan at 4.41, indicating their strong alignment with this theme. In contrast, Tehran province's SPP scores 2.98, making it the least compliant, followed by the Fars plan at 3.09 and the North Khorasan plan at 3.75.

The analysis indicates that the manifestation of grey ethics is highest in the Khuzestan province's Spatial Planning Project (SPP), which scored 4.85. The Central plan follows closely with a score of 4.5, and the Ardabil plan has a score of 4.39. In contrast, the lowest scores were recorded for Tehran province's SPP at 2.33, the Fars plan at 2.33, and the Sistan and Baluchistan plan with a score of 2.84 (Table 2).

**Table 2. Scores of the themes and paradigmatic categories of the ruling rural development according to the selected SSP**

| Provinces / Themes and categories | Mazandaran | Ardabil | Hamadan | Khuzestan | Fars | Tehran | Markazi | Sistan and Baluchistan | Khorasan Shomali |
|---|---|---|---|---|---|---|---|---|---|
| Anti-rural vision | 4.44 | 3.38 | 3.19 | 4.81 | 2.63 | 2.38 | 3.81 | 2.38 | 4.13 |
| Functional lens | 4 | 4.5 | 4.38 | 4.88 | 2.38 | 2.38 | 2.88 | 2.75 | 2.38 |
| Understanding the village in the physical-economic context | 4.25 | 3.75 | 4 | 5 | 2.75 | 1.75 | 3.25 | 3 | 3 |
| External dynamic force | 4.1 | 3.4 | 2.9 | 4.7 | 2.2 | 2.4 | 3 | 2.9 | 3 |
| Objective ontology | 4.2 | 3.76 | 3.62 | 4.85 | 2.49 | 2.23 | 3.23 | 2.76 | 3.13 |
| Objective cognitive resources | 4.2 | 3.8 | 3.4 | 5 | 2.8 | 2 | 3.8 | 2.4 | 2.6 |
| Cognitive scale of the village unit | 4.57 | 3.57 | 3 | 4.64 | 2.36 | 1.93 | 3.5 | 2.79 | 3.36 |
| Absolute and relative space | 4.5 | 4.5 | 4.67 | 5 | 3.5 | 3.5 | 4.5 | 3.83 | 3.67 |
| Equalization based on spatial laws | 4.27 | 4.45 | 4.64 | 4.09 | 3.64 | 3 | 4.18 | 2.36 | 4.27 |
| Causality of rural phenomena | 4.7 | 4.7 | 4.5 | 5 | 4.5 | 4.2 | 4.9 | 4.2 | 3.4 |
| positive epistemology | 4.45 | 4.21 | 4.04 | 4.75 | 3.36 | 2.93 | 4.18 | 3.12 | 3.46 |
| Linear genre (Euclidean) | 4.33 | 3.67 | 3.33 | 5 | 2.17 | 2.5 | 5 | 2.67 | 4 |
| The governance of the theory of rural modernization and transformation | 3.17 | 4.67 | 3.67 | 5 | 2.67 | 2.33 | 4.67 | 4 | 3.33 |
| Quantitative, sometimes quantitative methodology | 4.4 | 4.73 | 4.73 | 5 | 3.18 | 3.09 | 4.64 | 4.18 | 4.18 |
| Prescriptive and centralized planning style of government type | 4.71 | 4.59 | 4.76 | 4.82 | 4.35 | 4 | 4.47 | 4.29 | 3.47 |
| Seprative praxis | 4.15 | 4.41 | 4.12 | 4.96 | 3.09 | 2.98 | 4.69 | 3.79 | 3.75 |
| Neglect of reflectivity | 4.54 | 4.31 | 4.31 | 4.38 | 2.62 | 2.31 | 4.62 | 2.69 | 2.85 |
| Adopt a neutral approach to power | 3.8 | 4 | 2.5 | 5 | 2.8 | 2.3 | 4.6 | 2.5 | 2.6 |
| Exclusivity | 5 | 4.57 | 4.71 | 5 | 2.71 | 2.71 | 5 | 2.71 | 4 |
| Protecting the interests of specific groups | 3.44 | 4.67 | 4.56 | 5 | 2.78 | 2 | 3.78 | 3.44 | 4.78 |
| Gray ethics | 4.2 | 4.39 | 4.02 | 4.85 | 2.73 | 2.33 | 4.5 | 2.84 | 3.56 |
| The paradigmatic model of rural development prevailing in SPPs | 4.26 | 4.19 | 3.96 | 4.84 | 2.94 | 2.63 | 4.15 | 3.12 | 3.47 |

Figure 2 compares the scores for the elements (themes) of the prevailing rural development paradigm based on the analyzed SPPs. This cumulative analysis indicates that the provincial rankings in Iran adhere to a regressive rural development paradigm model. Statistical findings reveal that out of 20 cumulative points derived from the four themes within the paradigmatic model, Khuzestan province achieved the highest score of 19.5. In contrast, Tehran province recorded the lowest score of 10.5, reflecting its limited alignment with the demonstrated elements of this rural development paradigm.

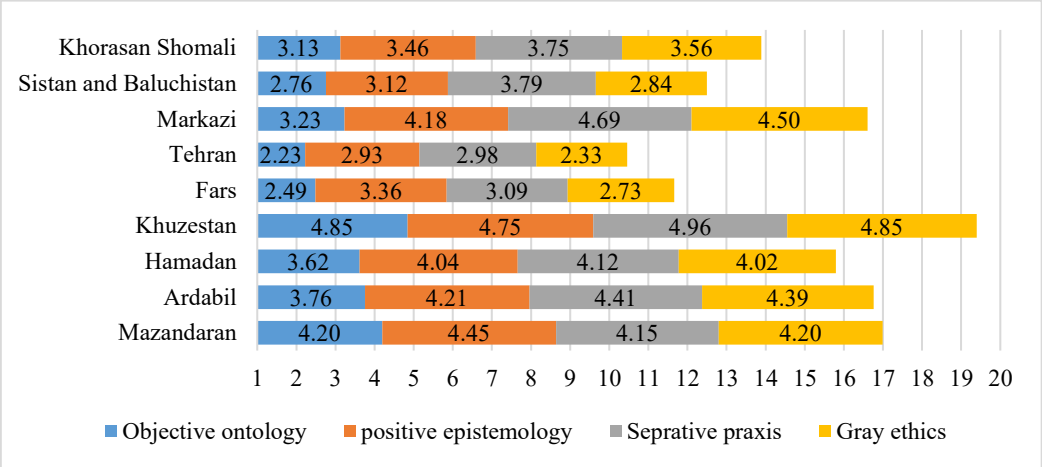


**Figure 2. Cumulative comparison of the scores of the dominant rural development paradigm elements according to the studied SSP**

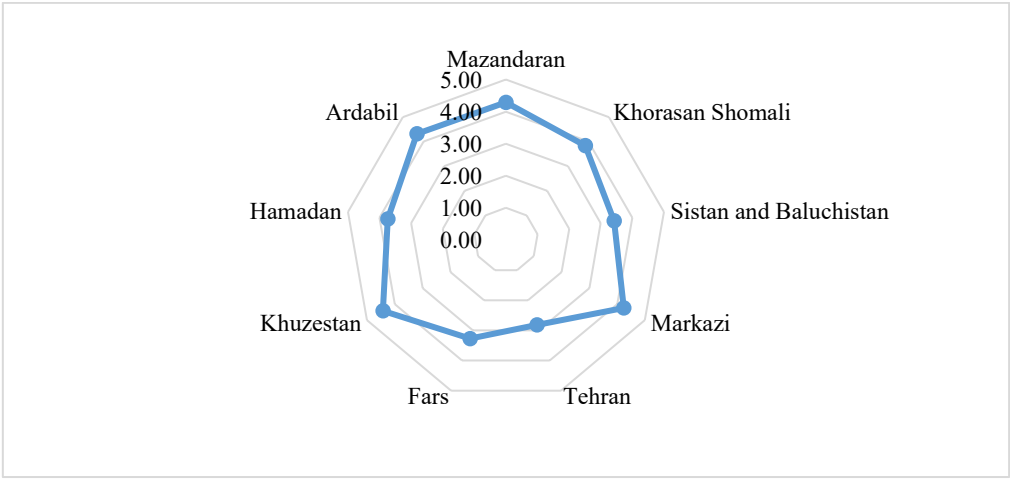


**Figure 3. The number of points of the rural development paradigm model according to the study SSP**

The data presented in Radar Figure 3 offers a comprehensive overview of the status of the rural development paradigm model across selected provinces. This chart summarizes the final output based on four themes and 17 main categories related to the paradigm model. Each province's survey documents are evaluated on a scale where higher scores indicate a greater degree and intensity of characteristics associated with the regressive rural development paradigm in the selected plans. Khuzestan province's Spatial Planning Project (SPP) scores 4.84, the highest among the provinces, while Tehran province's SPP, with a score of 2.63, ranks the lowest. This stark contrast illustrates the characteristics associated with adherence to the regressive rural development paradigm model. The data indicates that Khuzestan exemplifies a more substantial alignment with this paradigm, whereas Tehran reflects a significant departure.

The view of SPPs on rural development can be succinctly summarized as "small improvements while maintaining the regressive paradigm model." This shift indicates that researchers have transitioned from affirmative to post-positivism viewpoints. Figure 4 illustrates this trend, showing the inclination of plans toward various philosophical approaches over time, particularly at the moment of their approval. The graph reveals that the tacit knowledge of executives and supervisors in preparing experimental plans has had a more substantial influence than the accumulation of scientific knowledge over time.

The situation illustrates that although the Ardabil province Spatial Planning Project (SPP) was developed four years after the Fars province SPP,

the same project manager has continued in this role, compiling the plan based on evidence-based principles. Since 2014, the Fars province SPP has been available for other provinces seeking to create their plans. However, it is noteworthy that three of the five selected designs have advanced without referencing these established top-tier designs.

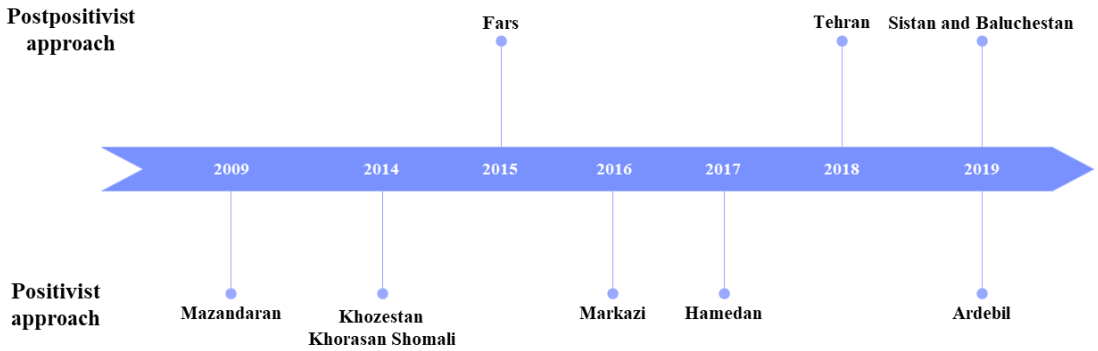


**Figure 4. The tendency of plans towards philosophical approaches by the time of their approval**

Participants cited various reasons for the differing tendencies of designs toward philosophical approaches. For instance, Participant 4 noted that project implementers often compile documents without leveraging previous experiences and lessons learned. This lack of reflection hinders the creation of a network of shared thoughts and opinions necessary for scientific accumulation. Additionally, Participant 6 echoed this sentiment, emphasizing that the ongoing nature of this issue perpetuates the disconnect from prior knowledge and insights. This perspective highlights the need for a more collaborative approach that integrates past experiences into current planning processes, fostering a culture of continuous learning and improvement in rural development strategies.

He noted that completing the provincial assembly documents was perceived as a political achievement driven by governmental pressure at the time. This situation compelled executives to fulfill their responsibilities—essentially documenting services—without regard for content or the prevailing intellectual framework. While all perspectives are valid, another viewpoint emerges: executives and employers have largely neglected discussions surrounding philosophical and theoretical foundations. This oversight has allowed formalities to overshadow substantive content, resulting in a focus on the "central service description" within the selected documents.

Figure 5 illustrates the zoning of points representing the dominant rural development paradigm model in the studied SPPs. The findings indicate that Khuzestan province's SPP, with a score of 5, demonstrates the highest adherence to the paradigm model in rural development. Following this, the SPPs of Central Province, Hamedan, Mazandaran, and Ardabil each scored 4. The SPP of North Khorasan province received a score of 3, while Sistan and Baluchistan and Fars provinces scored 2. Lastly, Tehran province's SPP, with a score of 1, reflects the lowest degree of alignment with the model.

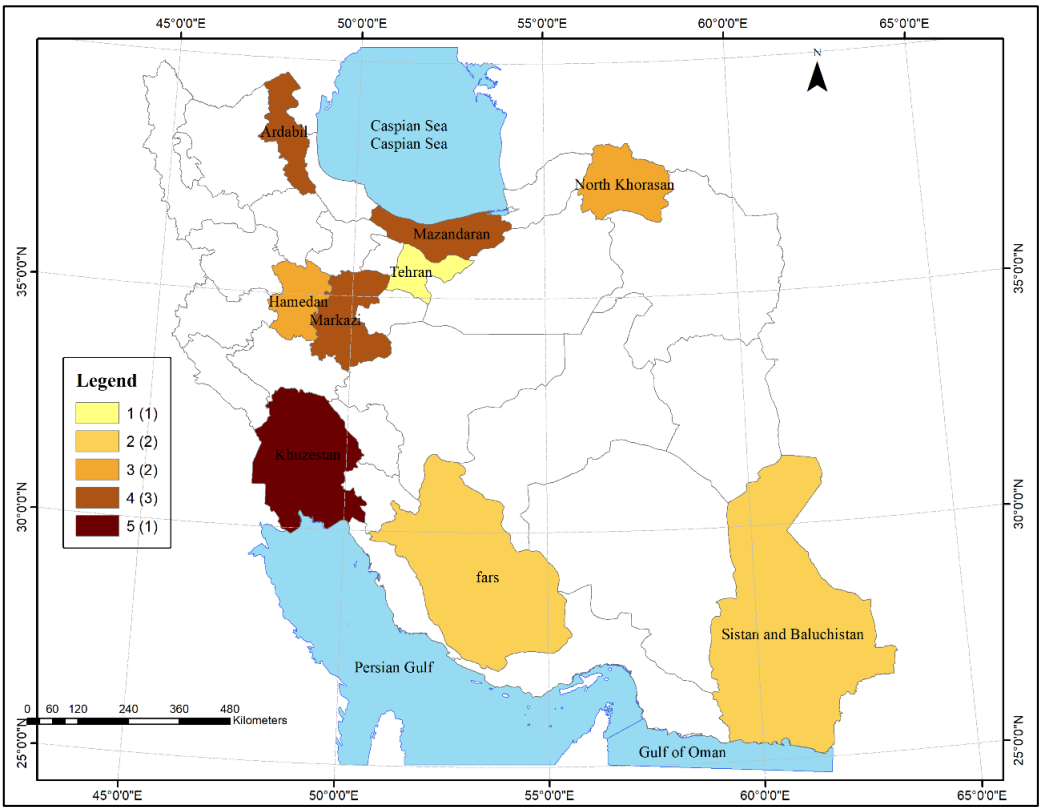


**Figure 5. Zoning of the points of the dominant rural development paradigm model in the studied SSP**

## 5. Discussion and conclusion

This study is based on analyzing documents from nine selected Spatial Planning Programs (SPPs). The results were derived from synthesizing findings obtained through qualitative content analysis and expert interviews. The assessment of the paradigmatic model allowed for a comparative analysis of SPPs that exhibit geographical and socio-economic variations. Additionally, the identified themes and categories facilitated the characterization of the rural development model for spatial comparison. Upon entering the research area, the researcher gathered valuable information that had previously received limited attention. This was accomplished through various methodologies, including observation, document content analysis, semi-structured interviews, and vector notes. The objective was to document the programs objectively and capture them as lived experiences, transforming these observations into concepts informed by the researcher's theoretical sensitivity. The research findings reveal new dimensions of the rural development model within Iranian SPPs, detailed in the following sections.

The findings indicate that analyzing rural development projects through the paradigm model can uncover theoretical and practical directions and challenges that have previously lacked a methodological framework for evaluation. It is essential to recognize that this study's paradigm model's evaluation framework is not fixed or inflexible. The objective was to illuminate various aspects that reflect prevailing actions and policies, suggesting that the paradigm analysis model may evolve based on contextual realities.

This analysis positions the paradigm model as a comprehensive and integrated framework for understanding the role of villages within development programs. Supporting these findings, Cejudo and Navarro (2020) argue that, contrary to common mechanistic views, rural development projects serve as a platform for crystallizing fundamental philosophical and scientific ideas within the macro-planning systems of countries, as formulated by executive managers. However, the results also highlight that discussions surrounding rural development are hindered by deficiencies in both "knowledge" and "implementation" within

these projects (Momani, 2024).

The ontological study has unveiled new perspectives on project promoters' insights regarding rural development. The worldview of project promoters significantly influences rural development practices. Generally, planners have approached villages and their inhabitants through various lenses, which can profoundly impact the future of these regions and the broader territorial landscape. For instance, the analysis revealed that anti-rural sentiments are evident in the plans for Mazandaran, Khuzestan, Markazi, and North Khorasan, whereas more progressive approaches to preserving and developing villages are apparent in the projects for Tehran, Shiraz, and Sistan and Baluchestan. The promotionist perspective on villages can primarily be defined through two viewpoints: viewing the village as a "useless element in the vastness of the territory" and recognizing the incorporation of rural areas into the urbanization process. A content analysis of SPP documents aimed at distinguishing urban from rural areas illustrates how these perceptions shape planning and development strategies. Additionally, studies by Taleb (2018) and Amani et al. (2020), align with this research, indicating that project promoters exhibit ambivalence toward rural policymaking. In projects from Mazandaran, Markazi, and Khuzestan, for example, the term "urban" is associated with concepts such as centrality, professionalism, and specialized services, while "rural" is framed as marginal or peripheral, characterized by simplicity.

Another significant finding is the emphasis on economic factors in rural development within these plans. This perspective is closely tied to a traditional and inefficient rural economy that fails to address the challenges facing these areas through connectivity expansion alone. Furthermore, Ray (2006) and Mokhtari Karchegani et al. (2024), argue that most rural programs fall under the agricultural sector. By focusing predominantly on agriculture, these projects attempt to tackle rural issues primarily through this sector's lens, potentially overlooking broader dimensions of rural development.

The findings indicate that uncertainty regarding the village's role within the territorial system has resulted in programs that lack a coherent vision. In the mid-2010s, project promoters shifted their approach from an "anti-rural" stance to a "rural protection" strategy. However, this transition was not consistently applied across all programs developed during the 2010s and beyond. For instance, the Khuzestan project, although approved in the late 2010s, did not include an independent section on rural studies and was instead categorized under the agricultural section. Badri et al., (2019) and Ghaderi et al., (2017) identified a limited perspective on the village and an exclusive focus on the classical agricultural economy as significant shortcomings in the evaluation of these projects. In practice, such policies lacked the necessary innovations to foster collaborative efforts and were often misaligned with the spatial context of the villages.

The research findings indicate that projects utilize objective cognitive resources to comprehend rural phenomena. Researchers primarily depend on observable and measurable data to analyze social issues related to these phenomena. The demand for consensus and a common understanding among researchers arises from their pursuit of "objective data," a principle significantly shaped by the perspectives of positivist experts. In this context, the term "objectivity" becomes contentious, as proponents of positivism interpret it differently than their critical counterparts. This divergence underscores the complexities surrounding objectivity in research, where the quest for unbiased and measurable data often clashes with the acknowledgment of the subjectivities inherent in the research process.

Proponents of positivism equate objectivity with the selection of measurable indicators and statistical data. In contrast, advocates of the modern critical school view it as a capacity for evaluation by the scientific community. Recognizing this nuanced distinction can enhance the clarity of the methodological orientation in rural studies projects.

The findings indicate that the epistemological system governing projects shapes the cognitive resources, the analysis of space, and the behavior of the actors involved. A positivist framework has dominated various cognitive aspects of these projects. As an abstract concept characterized by diverse interactions, relations, and flows, space is ultimately defined by how these elements are represented. Planners have concentrated on the idea that to ascertain the function of a space, they must either reference its components or consider it

as a whole. This focus reflects an ongoing epistemological debate regarding space and the representation of its function across different frameworks.

The findings reveal that this epistemological debate is particularly pronounced in the projects for Khuzestan, Markazi, Mazandaran, Hamedan, and North Khorasan, where space is depicted as a singular, independent, and objective phenomenon. Mokhtari-Karchegani et al. (2020) describe this situation as spatial atomism. The studies conducted demonstrate that most projects examine rural areas within strictly defined political borders, presenting these locations not as networks of flows but as separate and fragmented units. This approach neglects the potential for understanding the coherent and integrated nature of the place. In contrast, other studies align with these findings by challenging the conventional cognitive understanding of rural space (Douglass, 2006, 2018) and emphasizing the importance of viewing villages as interconnected and relational systems (Esparcia, 2014). This perspective advocates for a more integrated approach to rural development that recognizes the complex relationships both within and between villages, rather than treating them as isolated entities.

The findings reveal the inadequacy of local development strategies in identifying effective spatial development practices. This inadequacy stems from the emphasis placed by projects such as those in Mazandaran, Ardabil, Hamadan, Khuzestan, and Sistan and Baluchestan on causal analyses of rural phenomena while neglecting the socio-spatial processes that historically shape these phenomena. Consequently, this oversight undermines the analytical capacity of local community collective actions for project promoters (Harvey, 2006; Lang et al., 2022). As a result, policies implemented without a thorough understanding of spatial development's internal and external processes are likely to fail, particularly when external forces such as the central government impose initiatives. In contrast to studies conducted in developing countries—such as those by Stead (2012), Berisha et al. (2021), and Nowak et al. (2022)—the present study demonstrates that provincial planning projects in Iran exhibit low effectiveness in strengthening or enhancing collective actions aimed at specific goals within the provinces.

Despite these shortcomings, promoters do not perceive a need to establish a coherent paradigm model in provincial planning, as Badri et al. (2019) and Ghaderi et al. (2017) noted. This lack of coherence has resulted in weak coordination among the institutions responsible for implementing these projects, which is inconsistent with the requirements of territorial planning in rural areas.

The findings indicate that "discrete praxis" has generated multiple consequences for the projects. Promoters have attempted to complete various components of the projects linearly, leading to a misalignment with the social context of the policies. All projects tend to prioritize "quantity" in spatial planning, particularly in SSPs (Forester, 2015). This tendency stems from the interplay between "objectivity" and "realization," suggesting that methods employed in rural areas emphasize the selection of measurable and countable indicators (Mokhtari et al., 2023). Mathematical models play a crucial role in designing spatial strategies, underscoring the technical epistemology inherent in provincial SSPs, which utilize statistical models to analyze complex spatial systems. Consequently, measuring rural phenomena predominantly relies on quantifiable resources such as data and statistics.

In spatial policy-making, the foundation of rural knowledge is rooted in the lived experiences of experts and officials. The literature has presented strong criticisms of the technocratic tendencies exhibited by planners. The findings indicate that theoretical assumptions often rely on imitation and fourth-order models to measure rural phenomena despite the varying contexts in which these assumptions are applied. Given this evidence, it is reasonable to assert that rural development practices within these schemes are influenced by positivist epistemology. Moreover, a disconnect exists between rural planning practices and their supporting theories. As Forester (2015) noted, this practice primarily delineates a linear development trajectory, positioning the state as the developer rather than a guide, frequently overlooking participatory capacities.

Ethics is a philosophical category that transcends boundaries. The fourth element of the evaluations addresses the weaknesses in the ethical framework of the paradigmatic model of rural development within the plans. It is crucial to recognize that

ensuring the integrity of the pathways defined by these paradigmatic standards falls within the realm of ethics. These ethical considerations uphold research projects' credibility, value, and reflective quality about their commitments to rural development. Ethics represents a missing link in the country's literature on rural development planning.

Following the studies of Rasoolimanesh et al. (2013), Azkia & Dibaji Forooshnai (2016), and Momeni (2019), it becomes evident that there has been a significant silence regarding editors' perspectives and the analysis of power dynamics, as researchers frequently invoke "scientific neutrality" to obscure ideological influences. The assumptions underlying these programs are commonly referred to as "gray ethics," aptly describing their approach to ethical issues related to rural development. The claim to impartiality in experimental designs is rooted in a twentieth-century epistemology that separates the learned mind from the phenomena under study, viewing planning as a specialized field that distances planners' knowledge from political influences and power structures.

Research indicates significant shortcomings in rural participation and empowerment and a lack of comprehensive rural development programs. Reliance on oil revenues and a centralized policy-making system complicate effective planning and contribute to imbalances in rural development. These factors highlight the necessity for a coherent strategy aligned with local needs and capacities.

A key aspect that emerged from this study is the necessity of local community participation in projects and processes. In top-down rural development strategies, local communities often have minimal input and tend to be ignored or marginalized. In contrast, the LEADER approach emphasizes the active role of local communities, which is crucial for project success and long-term sustainability. This involvement fosters greater local residents' awareness of their resources, needs, and potential. The analyzed projects illustrate that local communities contribute significantly through traditional knowledge, skills, and experiences. In many instances, they also provide financial support and serve as project promoters, thereby driving the genuine change processes.

In summary, while minor improvements can be observed in specific programs, these enhancements are often neither systematic nor well-planned, frequently arising from the individual knowledge of practitioners and participatory groups engaged in the planning process. It can be inferred that a primary solution to this stagnation is to revise the perspectives of academic and administrative researchers concerning rural development in Iran, particularly with regard to its territorial culture.

**Acknowledgments**

The current paper is extracted from the doctoral dissertation of the first author (Ali Mokhtari Karchegani) in Geography and planning, Tarbiat Madras University, Tehran, Iran.

**Authors′ contributions**

The authors equally contributed to the preparation of this article.

**Conflict of interest**

The authors declare no conflict of interest.

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*Journal of Research and Rural Planning*
Volume 13, No. 4, Autumn 2024, Serial No. 47, Pp. 19-38
**eISSN: 2783-2007** **ISSN: 2783-2791**
http://jrrp.um.ac.ir

**Original Article**

# بازاندیشی توسعه روستایی: تحلیل تقاطع‌های پارادایماتیک در پروژه‌های برنامه‌ریزی فضایی ایران

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## چکیده مبسوط

### ۱.مقدمه

طرح‌های آمایش‌سرزمین، در دهه‌های اخیر، به یکی از کلیدی‌ترین ابزارهای توسعهٔ سرزمینی برای کشورها تبدیل شده است. به‌نحوی که کشورهای توسعه‌یافته جهت‌گیری‌های کلان ملی خود را برمبنای این طرح‌ها پایه‌گذاری کرده‌اند. برهمین اساس، بسیاری از توسعه‌گران معتقدند مسیر توسعهٔ روستایی از طرح‌های آمایشی گذر می‌کند. در واقع، این طرح‌های آمایشی هستند که برای روستاهای یک کشور چگونگی به‌فهم درآوردن سازمان فضایی، اولویت‌بندی عملکردی – ساختاری و جهت‌گیری‌های توسعه را تعیین می‌کنند. متن حاضر برپایهٔ اکتشاف پارادایم فکری توسعهٔ روستایی از درون طرح‌های آمایش‌سرزمین کشور طراحی شده است. به‌نحوی که مطالعات صورت گرفته نشان می‌دهد در طول تاریخ توسعهٔ روستایی، سه پارادایم توسعهٔ روستاییِ برون‌زا، توسعهٔ روستاییِ درون‌زا و توسعهٔ روستاییِ نئودرون‌زا حاکم بوده است  هرکدام از این جستارها، پژواک‌های مختلفی از تفکر توسعهٔ روستایی را بسط می‌دهند که برای فهم آن‌ها لازم است چهار عنصر محوری هستی‌شناسی، معرفت‌شناسی، پراکسیس و اخلاقیات را مورد کنکاش قرار دهیم. در ادامه، وضعیت این چهار عنصر را در مدل پارادیمی توسعه روستایی حاکم در طرح‌های آمایش‌سرزمین کشور تشریح و مدل پارادایمی مطلوب از نظر محقق ارائه می‌گردد.

### ۲.روش شناسی تحقیق

طراحی استراتژی پژوهش برمبنای رویکرد آمیخته صورت پذیرفته است؛ این استراتژی مطابق با هدف کلان پژوهش امکان انتخاب روش‌های چندگانه را فراهم می‌کند. در همین راستا، در گام اول از روش تحلیل محتوای کیفی بهره جسته است. این روش برای تفسیر ذهنی محتوای داده‌های متنی از طریق فرآیند طبقه‌بندی کدگذاری، شناسایی مضامین و تشکیل الگوی مفهومی بکار گرفته می‌شود. جمع‌آوری داده‌ها از یک استراتژی ترکیبی استفاده می‌کند که با تحلیل محتوای کیفی داده‌های متنی شروع می‌شود، که با مطالعات اسنادی و پرسش‌نامه‌های متخصص برای اعتبارسنجی تکمیل می‌شود. جامعه آماری پژوهش حاضر شامل طرح‌های آمایش سرزمین استانی که بین سال‌های ۱۳۸۴ تا ۱۴۰۳ در ایران تهیه شده، است. برای انتخاب نمونه‌ها از روش نمونه‌گیری قضاوتی ، دسترسی به اسناد و همراه با مشورت از خبرگان دانشگاهی استفاده شده است. روش تجزیه و تحلیل داده‌ها، مطابق با راهبرد کیفی به کمی تحقیق ابتدا از روش تحلیل محتوای کیفی با بهره‌گیری از نظریه زمینه‌ای سازه‌انگاری، مقوله‌ها و زیر مقوله‌های مدل پارادایمی توسعه روستایی حاکم در طرح‌های آمایش منتخب را استخراج گردید. در گام بعدی، محققان با استفاده از روش مثلث‌بندی (صاحب‌نظران، مجریان، کارشناسان) اقدام به توزیع پرسشنامه‌های اعتبارسنجی کردند که در راستای کمی‌سازی یافته‌های کیفی بود. در نهایت، توزیع فراوانی تظاهرات عناصر مدل پارادایمی توسعه روستایی به تفکیک مناطق سنجیده و با کمک نرم افزار ARCGIS 10 به تصویر کشیده شده است.

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## ۳. یافته‌های تحقیق

یافته‌ها بر مبنای تحلیل مضمون اسناد آمایش مناطق ۹ گانه منتخب صورت گرفته است. بااین‌حال، برای عمق‌بخشی به یافته‌های تحقیق از مصاحبه‌های تکمیلی خبرگان دانشگاهی و اجرایی بهره جست. یافته‌های پژوهش، از بین ۴ مضمون و ۱۷ مقوله اصلی کشف‌شده به‌عنوان مدل پارادایمی توسعه روستایی واپسگرا در طرح‌های آمایش سرزمین منتخب تحلیل شدند. به‌طورکلی، میزان پیروی طرح‌های آمایش سرزمین منتخب از مدل پارادایمی توسعه روستایی واپس‌گرا با امتیاز (۳.۷۳) نشان می‌دهد که علی‌رغم تحولات و اصلاحات «اندیشه‌ای» و «نهادی» همچنان این دیدگاه غلبه دارد. تحلیل یافته‌های به تفکیک مضامین ۴ گانه نشان می‌دهد که در مدل پارادایمی به ترتیب، مضمون «پراکسیس تفریدی» با امتیاز (۳.۹۹) بیشترین تظاهرات را داشته و مضمون «معرفت‌شناسی اثباتی» با امتیاز (۳.۸۳)، مضمون «اخلاقیات خاکستری» با امتیاز (۳.۷۷) و درنهایت مضمون «هستی‌شناسی عینی» با امتیاز (۳.۳۶) با اختلاف کمی سهم کمتری داشته‌اند. همچنین، یافته‌های انباشتی نشان می‌دهد که از مجموع ۲۰ امتیاز تجمعی حاصل از چهار مضمون مدل پارادایمی، طرح آمایش سرزمین استان خوزستان با امتیاز (۱۹.۵) بیشترین و طرح آمایش سرزمین استان تهران با امتیاز (۱۰.۵) کمترین میزان تظاهرات را داشتند. نگاه طرح‌های آمایش سرزمین به توسعه روستایی را می‌توان در یک جمله این‌گونه توصیف کرد که: «خرده پیشرفت‌هایی با حفظِ مدلِ پارادایمیِ واپسگرا.» بدین معنا که آمایشگران از دیدگاه اثباتی به دیدگاه‌های پسااثباتی حرکت کرده‌اند. به نحوی که با کشف رویکرد فلسفی طرح‌ها با زمان تصویب آن‌ها، نشان می‌دهد که دانش ضمنی مجریان و ناظران تهیه طرح‌های آمایشی، به نسبت انباشت علمی در طول زمان از تأثیرگذاری بیشتری برخوردار بوده است.

## ۴. نتیجه‌گیری

پژوهش حاضر نشان داد که واکاوی مدل پارادایمی به عنوان یک مفهوم فلسفی، می‌تواند راه را برای اندیشه‌ورزی عمیق دربارهٔ مسئله توسعه روستایی، به ویژه جایگاه این اندیشه‌ها در طرح‌های آمایشی هموار نماید. در واقع، مدل پارادایمی توسعه روستایی بینشی از بالا به جریان اندیشه‌ورزی است که چشم متفکران روستایی را بر روی جنبه‌های تیره و تار روشن می‌کند. با این اوصاف تحلیل مدل پارادایمی، به عنوان یک چارچوب تحلیلی عمیق و درهمتنیده برای درک جایگاه روستا در طرح‌ها به فهم درآورده شد. همانگونه که نشان دادند؛ برخلاف تصور عامیانه و مکانیکی از طرح‌های آمایش، در حقیقت این طرح‌ها بستر تبلور زیربنایی‌ترین تفکرات فلسفی – علمی آمایشگران کشور محسوب می‌شود که توسط نظام برنامه‌ریزی کلان کشور چارچوب‌بندی و به دست مجریان تدوین می‌گردد. نتایج بیان می‌دارد که بحث توسعه روستایی از نارسایی‌های «اندیشه‌ای» و «اجرایی» در طرح‌ها رنج می‌برد. علی‌رغم اینکه می‌توان خرده پیشرفت‌هایی را در برخی طرح‌ها مشاهده کرد، اما هیچگاه این خرده پیشرفت‌ها به صورت نظام‌مند و برنامه‌ریزی نبوده و اغلب نشأت گرفته از دانش فردی مجریان و گروه همکار در تهیه طرح‌ها بوده است. استنباط می‌شود؛ اصلی‌ترین راه برون رفت از این واماندگی بازخوانی اندیشه‌های آمایشگران (دانشگاهی و اجرایی) نسبت به امر توسعه روستایی ایران متناسب با فرهنگ سرزمینی آن است.

**کلید واژه‌ها:** الگوی پارادایم غالب، توسعه روستایی، طرح‌های توسعه سرزمین ایران، توسعه قهقرایی، مناطق نه‌گانه.

## تشکر و قدردانی

پژوهش حاضر برگرفته از رساله دکتری نویسنده اول (علی مختاری کرچگانی)، گروه جغرافیا و برنامه‌ریزی، دانشگاه تربیت مدرس، تهران، ایران است.

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**How to cite this article:**
Mokhtari Karchegani, A., Tavakoli, M., Pourtaheri, M. & Navarro Valverde, F.A. (2024). Rethinking rural development: Analyzing paradigmatic intersections in Iran's Spatial Planning Projects. *Journal of Research & Rural Planning, 13*(4), 19-38.
http://dx.doi.org/10.22067/jrrp.v13i4.2410-1111

**Date:**
*Received: 12-10-2024*
*Revised: 28-11-2024*
*Accepted: 12-12- 2024*
*Available Online: 12-12-2024*

*Journal of Research and Rural Planning*
Volume 13, No. 4, Autumn 2024, Serial No. 47, Pp. 39-63
**eISSN: 2783-2007** **ISSN: 2783-2791**
http://jrrp.um.ac.ir
**Original Article**

# The Role of Social Capital in the Sustainability of Rural Entrepreneurship (Case Study: The Eastern Margin of Zayandeh River, Isfahan)

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## Abstract

**Purpose-** This research examines the impact of social factors on the sustainability and success of rural entrepreneurship in the eastern border of Zayandeh River, Isfahan, Iran.

**Design/methodology/approach-** Using a qualitative grounded theory approach, data were collected through semi-structured interviews with 40 key stakeholders, including rural entrepreneurs, local managers, agricultural jihad managers and experts, entrepreneurship experts, and rural development specialists. MAXQDA software was used for data analysis.

**Findings-** The findings of this research show that trust, support, social participation and teamwork are very important for the success and sustainability of rural entrepreneurship. Mutual trust between entrepreneurs and communities, active participation in economic initiatives and joint efforts, increases innovation, productivity and adaptability in rural businesses. In addition, cultural norms and local power dynamics significantly influence entrepreneurial behaviors.

**Practical implications-** Policymakers should prioritize strengthening local financial institutions, fostering entrepreneurial culture, and adopting participatory methods for designing and implementing entrepreneurship programs. These measures can help to increase the economic capabilities of rural communities. Creating equal opportunities for all members of society and rebuilding trust between rural communities and government institutions is necessary and mandatory. This trust can lead to improved collaborations and effective partnerships. Also, strategies to remove the cultural barriers of entrepreneurship are also necessary to create a suitable environment for innovation and growth and to encourage more people to engage in entrepreneurial activities.

**Originality/value-** This study contributes to the existing literature by providing an integrated conceptual model of social factors affecting the sustainability of rural entrepreneurship. It enhances understanding of the social dynamics that shape entrepreneurial ecosystems in rural areas, particularly areas facing environmental and economic challenges. The obtained insights can provide effective policies and interventions aimed at promoting sustainable rural entrepreneurship in similar contexts.

**Keywords-** Social capital, Rural entrepreneurship, Social participation, Social support, Teamwork.

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**How to cite this article:**
Dorri Sede, S., Pourtaheri , M., & Torabi, Z. (2024). The Role of social capital in the sustainability of rural entrepreneurship (Case study: The Eastern Margin of Zayandeh River, Isfahan). *Journal of Research & Rural Planning, 1*3(4), 39-63.
http://dx.doi.org/10.22067/jrrp.v13i4.2410-1113

**Date:**
*Received: 28-11-2024*
*Revised: 10-01-2025*
*Accepted: 31-01- 2025*
*Available Online: 31-01-2025*

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## 1. Introduction

In recent decades, rural entrepreneurship has gained attention as an effective approach for sustainable development and economic growth in rural areas(Korsgaard et al., 2015). This approach not only contributes to job creation and poverty reduction but also leads to the empowerment of local communities(Bao et al., 2022). However, the success and sustainability of rural entrepreneurship initiatives are influenced by various social, economic, and environmental factors(Yang et al., 2022). Among these factors, social capital, social support, and local networks have increasingly been recognized as key elements in determining the long-term success of entrepreneurial activities(Zhao & Li, 2021). This research aims to examine the impact of social factors on the sustainability of rural entrepreneurship in the eastern margin of Zayandeh-Rud in Isfahan. Due to environmental and economic challenges caused by water scarcity, this region presents an interesting case study for examining the dynamics of rural entrepreneurship. The role of social factors in rural entrepreneurship has been extensively studied in global literature. Studies show that high social capital can strengthen entrepreneurial networks and increase innovation and flexibility in rural businesses(Afzali et al., 2015).

Robert Putnam's social capital theory emphasizes the importance of trust and social connections in economic development(Prince, 2024). Woolcock (2001) also emphasizes the important role of social capital in promoting economic activities by fostering trust and cooperation between entrepreneurs and other community members. Ritchie and Brindley (2005) argue that a sense of belonging and trust in rural communities creates a conducive environment for entrepreneurial activities. Zhao and Li (2021) emphasize that social capital empowers rural entrepreneurs to access market information, secure financial support, and establish business partnerships. In Iran, Bagheri et al.(2018) have demonstrated that rural entrepreneurs benefit from strong social capital, as local trust and kinship ties facilitate access to resources and knowledge sharing. Despite extensive studies on the role of social factors in rural entrepreneurship, significant gaps exist in the current literature that this research aims to address. Most previous studies have examined social factors separately, while there is a need for an integrated model that demonstrates the complex interaction between these factors(Fitzpatrick et al., 2023). Additionally, limited research has been conducted on the role of these factors in environmental crisis conditions such as drought (Yang et al., 2022) and the impact of cultural norms and local power structures on the sustainability of rural entrepreneurship(Amblard, 2021). Furthermore, there is limited understanding of how the role of social factors changes over time and across different stages of rural entrepreneurship development( Li et al., 2022).

This research, by presenting an integrated conceptual model that covers these gaps, will contribute to a more comprehensive understanding of the role of social factors in the sustainability of rural entrepreneurship, especially in challenging environmental and economic conditions. This research aims to present an integrated conceptual model of the role of social factors in the sustainability of rural entrepreneurship, particularly in challenging environmental conditions. The main objectives include: 1) identifying and analyzing key social factors affecting the sustainability of rural entrepreneurship, 2) examining the interaction of these factors with each other and with environmental and economic conditions, and 3) proposing strategies to strengthen these factors to improve the sustainability of rural entrepreneurship. This study contributes to the expansion of existing literature by combining various theoretical perspectives including social capital theory, community-based development, and team entrepreneurship. The theoretical implications of this research include providing a comprehensive framework for understanding the social dynamics of rural entrepreneurship, developing the concept of "social-entrepreneurial resilience" in the face of environmental crises, and offering new insights into the interaction between government policies, social factors, and the sustainability of rural entrepreneurship. These findings can provide a basis for developing new theories in the field of sustainable rural entrepreneurship in challenging conditions.

## 2. Research Theoretical Literature

Rural entrepreneurship plays a significant role in fostering sustainable economic development, particularly in developing countries. This type of entrepreneurship not only contributes to job creation and poverty reduction but also empowers local communities(Fernández Bellver et al., 2023). However, the sustainability of rural entrepreneurship is influenced by a multitude of factors, including social, economic, and environmental variables. Among these, social factors such as social support, social capital, and local networks are increasingly recognized as key elements in determining the long-term success of entrepreneurial activities(Bao et al., 2022; Suguna et al., 2024). The role of these social factors in rural entrepreneurship has been extensively examined in the global literature, particularly in the areas of rural development, socioeconomic sustainability, and community well-being(Jannesari et al., 2022). Results from these studies indicate that high social capital can strengthen entrepreneurial networks and enhance innovation and resilience in rural businesses. Social capital refers to the existence of networks of relationships, trust, and norms that form within a community(Afzali et al., 2015; Lin et al., 2024). Robert Putnam's social capital theory emphasizes the importance of trust and social connections in economic development and suggests that communities with high levels of social capital are more successful in creating and sustaining innovative and social enterprises(Morrow & Scorgie-Porter, 2017). Woolcock (2001) also believes that social capital plays a significant role in promoting economic activities by fostering trust and cooperation between entrepreneurs and other community members. Similarly, Ritchie and Brindley (2005) argue that a sense of belonging and trust in rural communities fosters an environment conducive to entrepreneurial activities. This sense of belonging not only strengthens the entrepreneurial spirit but can also help reduce youth migration. In fact, it can be said that strong local networks, trust, social cohesion, access to resources, knowledge sharing, and participatory opportunities facilitate these factors, all contributing to the sustainability of rural entrepreneurship(Prince, 2024). In this regard, Zhao & Li (2021)emphasizes that social capital empowers rural entrepreneurs to access market information, secure financial support, and establish business partnerships, thereby enhancing their resilience to economic fluctuations. Particularly in resource-constrained regions, strong social networks can provide the necessary support to overcome entry barriers and sustain investments. Bagheri et al (2018) have demonstrated that rural entrepreneurs in Iran benefit from strong social capital, as local trust and kinship ties facilitate access to resources and knowledge sharing these social structures provide a framework that strengthens the long-term sustainability of entrepreneurial investments. The research of Salehi Kakhki et al. (2019)shows that social and cultural factors, such as traditional beliefs and distrust of government programs, can reduce participation and cooperation in rural communities, thus hindering entrepreneurial development. In addition to trust, community engagement emerges as another critical factor(Mehdi et al., 2018). Entrepreneurs who actively involve their local communities tend to experience higher levels of business sustainability. These interactions enable businesses to better understand local needs and consequently offer products and services that more closely align with community preferences(Korsgaard et al., 2015). This collaborative approach fosters a supportive environment that strengthens both economic and social resilience. Community engagement and social cohesion are vital for the sustainability of rural entrepreneurship. Rural entrepreneurs typically rely on the support of local communities to provide labor, resources, and customers(Fitzpatrick et al., 2023).

According to Peredo & Chrisman (2006), community-based entrepreneurship leverages local resources and is embedded in social structures that ensure shared benefits and local control. This is particularly impactful for rural businesses as it fosters local support and ensures businesses are responsive to community needs. Javan et al. (2011) studies reveal that, in the absence of strong financial and governmental support, participation and social networks assist rural entrepreneurs in accessing necessary resources such as capital, knowledge, and labor. This research highlights the critical importance of locality in communities facing environmental and economic challenges, such as those near the eastern edge of the Zayandeh Rud, where water scarcity has exacerbated rural problems. In addition, Farahani et al. (2014)

specifically investigated the factors influencing entrepreneurial growth in the rural areas of Abdanan, Iran. These researchers emphasized the importance of local participation and community involvement in overcoming the lack of formal infrastructure and government support and demonstrated that in rural areas, community participation can be a suitable substitute for the absence of government support and contribute to entrepreneurial growth. Beyond trust, participation, and social support, teamwork and collective action have also been identified as key factors in the success of rural businesses and entrepreneurship in challenging environments (Zamzami, 2021). Team entrepreneurship theory emphasizes that entrepreneurial success is highly dependent on a team's ability to collaborate and complement each other's skills. In rural settings often characterized by limited financial, human, and infrastructural resources, teamwork can serve as a solution to overcome these constraints (Cardon et al., 2017). Collective action also holds a special place in Robert Putnam's social capital theory. This theory emphasizes the importance of individuals collaborating and participating in group activities to achieve common goals. In rural communities, collective action can enhance the flexibility and innovation of businesses and increase efficiency through task division and knowledge sharing among individuals(Claridge, 2018). Theories related to collective action and teamwork believe that forming entrepreneurial teams that combine different skills and expertise can lead to greater innovation and resilience in the face of challenges(Linhardt & Salas, 2023). Especially in rural communities with limited resources, entrepreneurial teams can benefit from diverse expertise and, by dividing tasks and utilizing social networks, increase the efficiency of their businesses(Wei et al., 2023). Additionally, Adam Smith's theory of the division of labor points to the importance of specialization and division of labor in improving economic efficiency. This theory suggests that by dividing work among individuals, they can specialize in different areas and consequently experience greater productivity in production and businesses(Figart, 2004). This concept is particularly important in rural communities where human resources and expertise are limited. However, teamwork and collective action in rural areas face specific challenges. For instance, in areas with higher social trust, entrepreneurs and community members can achieve better results through greater cooperation and active participation (W. Li et al., 2022). Moreover, cultural challenges and misconceptions may hinder cooperation and collective action among rural communities (Amblard, 2021). However, by promoting a culture of cooperation and participation and providing appropriate training, these challenges can be mitigated and a foundation can be laid for the success of team-based businesses (Dominici et al., 2022). This is important because collective action and teamwork, due to their ability to enhance innovation and create social cohesion, are among the most important factors in the success of rural businesses(Steiner et al., 2023). Collaboration between entrepreneurs and community members can lead to the transfer of knowledge and experiences, the division of responsibilities, and consequently, increased self-confidence and psychological empowerment of individuals (Chenavaz et al., 2023).

Literature reviews indicate that social factors, particularly trust, social capital, social participation, and teamwork, play a pivotal role in the success and sustainability of rural entrepreneurship. These factors, especially in regions facing environmental and economic challenges, can have a significant impact on improving economic and social conditions (Figure 1).

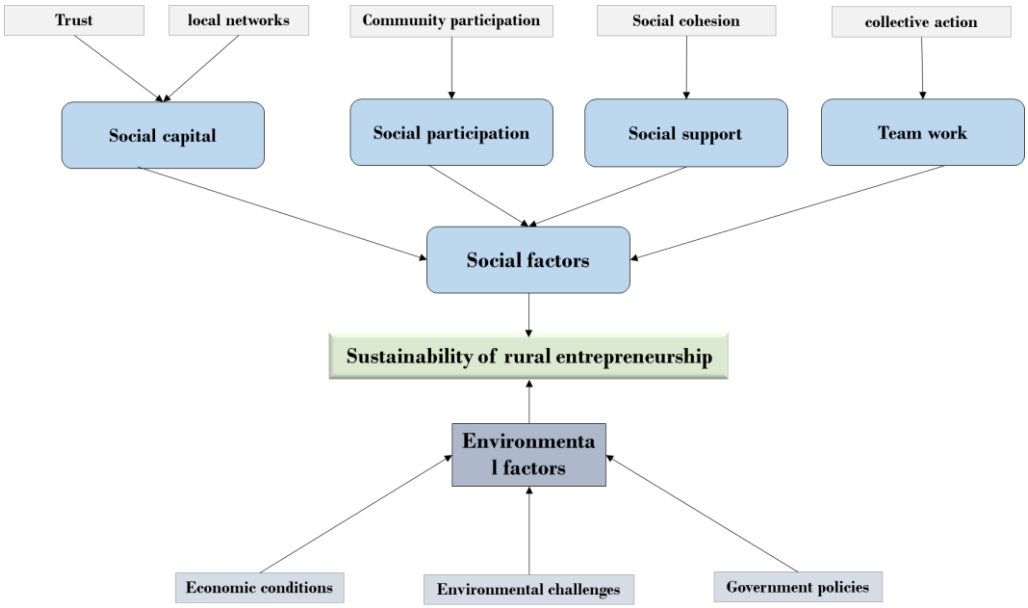


**Figure 1. Social factors affecting the sustainability of rural entrepreneurship**

Therefore, this research examines and analyzes the role of social factors in rural entrepreneurship with a focus on the eastern margin of Zayandeh Rud in Isfahan; a region that has unique conditions for rural entrepreneurship due to water scarcity and environmental challenges. The sustainability of rural entrepreneurship is complexly linked to these social factors and requires a comprehensive framework to understand how social dynamics affect the sustainability of entrepreneurship in resource-constrained environments(X. Li et al., 2022). Additionally, the role of government policies and local institutions in strengthening these social factors cannot be ignored. By adopting comprehensive policy approaches based on socio-cultural capacities, increasing the sustainability of rural businesses and achieving sustainable development in these areas will be possible (Yang et al., 2022). Therefore, Social capital has emerged as a critical yet understudied factor in the sustainability of rural entrepreneurship, particularly in regions facing environmental and economic challenges. While traditional approaches to rural development have primarily focused on physical and financial capital, the role of social relationships, trust networks, and community cooperation in supporting entrepreneurial activities has gained increasing recognition. In resource-constrained rural environments like the eastern margin of Zayandeh River, social capital—comprising networks of relationships, trust, and shared norms within communities—can facilitate access to resources, knowledge sharing, and market opportunities that are essential for entrepreneurial success. However, the specific mechanisms through which social capital influences rural entrepreneurship outcomes, especially in environmentally stressed areas where traditional agricultural livelihoods are under threat, require deeper investigation. Understanding these dynamics is crucial for developing effective policies and interventions to support sustainable rural entrepreneurship in similar contexts. Figure 1 provides an overview of factors identified in the literature as influencing the sustainability of rural entrepreneurship. These factors include social capital, social participation, social support, and teamwork, which have been identified in various studies as key components in the success and sustainability of rural entrepreneurship. This figure also shows the interactions of these factors and the role of economic and environmental contexts in entrepreneurial processes. However, it should be emphasized that this figure is not a fixed theoretical framework but rather a tool for better understanding the relationships between these factors based on a literature review. This research will use a qualitative approach to explore and analyze these relationships from the perspective of local stakeholders in the eastern region of Zayandeh Rud. The results from the qualitative data analysis may reveal new patterns and

relationships that contribute to enriching and completing this conceptual framework.

## 3.Research Methodology

### *3.1 Geographical Scope of the Research*

The downstream section of the Zayandeh Rud watershed in Isfahan Province, known as the eastern margin of Zayandeh Rud River, encompasses three counties: Isfahan, Varzaneh, and Herend. This area is divided into 5 districts and 14 rural districts, and it is home to 133 villages with a total population of 104,607. With a rich historical background spanning approximately 500 years in utilizing the river's water for agriculture and livestock farming, this region is renowned as one of Iran's agricultural hubs and a center for water-related activities. However, over the past decade, the region has faced serious challenges due to the drought crisis and a significant decrease in the flow of Zayandeh Rud (Figure 2).

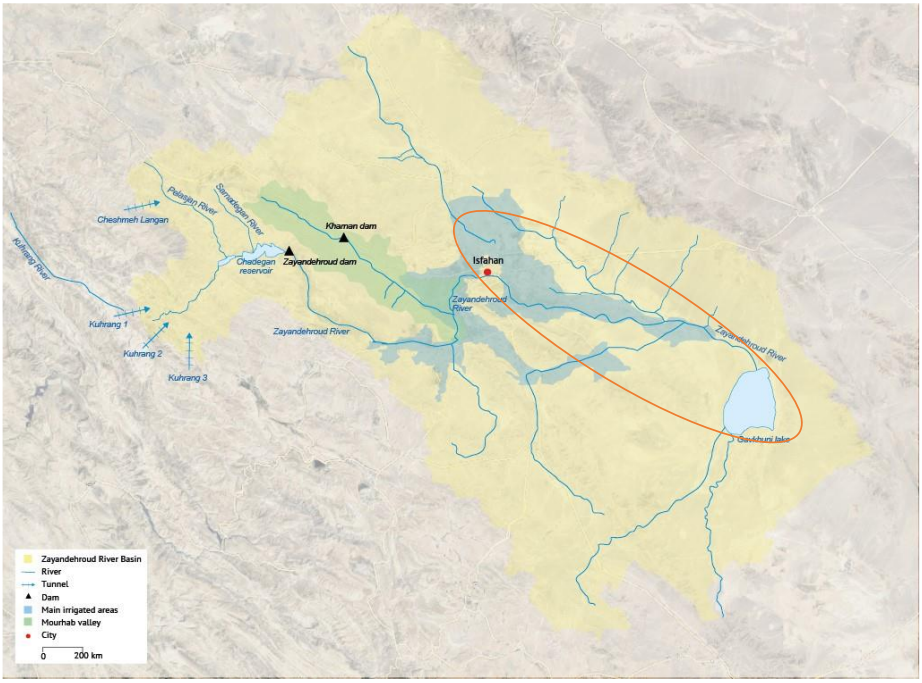


**Figure 2. Map of Zayandeh River watershed of Isfahan and its main tributaries.**

This has resulted in a decline in the production capacity of agricultural lands and traditional orchards, leading to widespread unemployment, rural-to-urban migration, and a sharp decline in income levels and welfare in these rural communities. In such circumstances, the government has turned to developing rural entrepreneurship as a suitable solution to address these areas' economic and social challenges. However, despite allocating specific budgets and implementing numerous projects, satisfactory results have not been achieved. Studies show that one of the most important barriers to the development of rural entrepreneurship in these areas is the existence of cultural challenges. These challenges can reinforce norms and beliefs that exacerbate inequalities and consequently lead to an unfair distribution of access to facilities and resources. In other words, cultural beliefs and norms can act as barriers that prevent equal access to opportunities and resources for all members of society.

### *3.2 Methodology*

Given the research objective to investigate the social challenges and their impact on the success and sustainability of rural businesses (rural entrepreneurship) in the study area, this research has adopted a grounded theory approach (Charmaz, 2017). Adopting this approach offers distinct advantages over other methodologies for studying complex social phenomena in the realm of rural entrepreneurship. Unlike quantitative methods that test predetermined hypotheses, grounded theory enables the emergence of new theoretical insights directly from the data, making it particularly valuable for understanding the nuanced

interactions between social capital and entrepreneurship in rural settings. The method's iterative nature and systematic coding process, supported by MAXQDA software, allows researchers to capture complex social relationships and cultural dynamics that might be overlooked by more structured approaches, while simultaneously maintaining the flexibility to adapt as new insights emerge. This methodology is especially suited for the current study as it enables researchers to understand the contextual specificity of social capital formation in rural areas, generate theory directly grounded in local realities, and account for the simultaneous influence of multiple variables and their relationships—capabilities that are particularly crucial when studying dynamic social processes in rural communities. This qualitative approach enables a deep understanding and analysis of social challenges and obstacles faced by rural entrepreneurs. Additionally, this method contributes to a better understanding of how social norms and beliefs can act as barriers or facilitators to the development of rural businesses. Therefore, qualitative thematic analysis in this research is considered a suitable tool for a thorough examination of institutional challenges and their consequences for rural entrepreneurship development in the study area. This qualitative analysis provides valuable insights for designing targeted policy solutions to improve, educate, and change the local community's behaviors, beliefs, and values and support entrepreneurship in these rural areas. In this research, the researcher has also conducted a preliminary review of the existing literature at the beginning of the study to gain initial understanding and develop theoretical sensitivity regarding the key concepts of rural entrepreneurship, empowerment, and its spatial dimensions. This has helped identify research gaps, design interview questions, and select initial samples. Furthermore, familiarity with some existing concepts and theories has provided a foundation for conceptualization and categorization during data analysis. However, it is important to note that despite this initial study, the researcher has strived to maintain an open mind and avoid imposing pre-existing frameworks, allowing new categories and concepts to emerge from the data. In other words, the literature has been used only to create sensitivity and not as a theoretical requirement. Accordingly, during the data collection and analysis process, whenever new concepts and categories that were not present in the initial literature emerged, the researcher immediately took steps to develop and deepen the literature in that specific area. Thus, this research uses the literature and data in an interactive and cyclical process. As the analyses progressed and new concepts and relationships emerged, the research literature was gradually completed and enriched. This approach is fully consistent with the principles of grounded theory, which emphasizes continuous and flexible movement between data and literature(Charmaz, 2017; RADFORD, 1977; Stebbins, 2006).

### *3.3 Sampling and Participants*

Snowball Sampling was employed to identify respondents. This method, also known as chain referral sampling, is widely used in qualitative research where new participants are identified through existing ones. Ghadiri Masoom et al. (2015) argue that snowball sampling is particularly suitable in the Iranian context where accessing the study population can be challenging. Given the sensitivity and impact of the research topic, potential respondents, especially stakeholders, might be reluctant to participate unless they trust the research process. Interviews related to cultural challenges and their impact on entrepreneurial activities in rural areas can be challenging, and interviewees may be cautious in this regard. This requires a sensitive and respectful approach to gain the necessary trust and obtain valid and useful information from the target population. If questions are framed in a way that makes the research topic sensitive or puts individuals' interests at risk, they may refuse to cooperate with the research team. In particular, if government employees feel that revealing certain facts may affect their position, they may resist the research team. Therefore, significant time was needed to build trust with potential respondents.

Interviews were conducted over a two-month period, from late January to late March 2024, with the cooperation of participants, through on-site visits and trips to several villages. During each visit and field trip, researchers spent significant time with respondents to gain their trust in participating in the interview. For this reason, most interviews were conducted in person and by phone. Initially, government officials were asked to help introduce potential respondents through referral chains. We

approached 50 potential participants, 40 of whom agreed to be interviewed. We tried to select potential participants from individuals with various job positions and responsibilities to obtain stronger results and avoid any potential bias. As a result, local managers, entrepreneurs, rural entrepreneurs, government managers and staff, small business and rural business trainers and consultants, and rural development professors and researchers participated in this study.

### 3.4 Data Collection

Interviews were conducted with participants either in person at their workplaces or by telephone following scheduled appointments. Potential participants were initially contacted by phone and invited to participate in the study. The interview guide consisted of 14 semi-structured questions focusing on various topics related to the study's objectives. All interviews were audio-recorded except for six respondents who were unwilling to have their voices recorded. The researchers recorded conversations and responses in writing for those who did not want the interview session to be recorded. Data was collected in Persian and then translated into English. Before starting the interview, the research objective was explained to the participants, and they were assured that the information obtained would not be shared with others. In this research, the data collection process continued until theoretical saturation was reached and the point of diminishing returns for the available information was attained (Collier, 1975). Data collection spanned from early February to late April 2024. After conducting this number of interviews (40 interviews), the research team concluded that while a satisfactory understanding had been achieved, no further information could be obtained. The descriptive information of the participants can be seen in Tables 1-3.

**Table 1. Demographic Distribution**

| Characteristic | Category | Number | % |
|---|---|---|---|
| Gender | Male | 23 | 57.5 |
| | Female | 17 | 42.5 |
| Age Groups | 30-39 | 12 | 30.0 |
| | 40-49 | 18 | 45.0 |
| | 50-59 | 8 | 20.0 |
| | ≥60 | 2 | 5.0 |
| Marital Status | Married | 36 | 90.0 |
| | Single | 4 | 10.0 |

Table 1, presents the fundamental demographic distribution of the research participants (N=40), revealing a relatively balanced gender representation with a slight male majority (57.5% male, 42.5% female). The age distribution indicates a concentration in the middle-age brackets, with 45% of participants falling within the 40-49 age range, followed by 30% in the 30-39 age bracket. This age distribution suggests a sample of participants with substantial life and professional experience. The marital status data shows a strong predominance of married participants (90%), which could reflect the broader social patterns in rural Iranian communities.

**Table 2. Educational and Professional Profile**

| Characteristic | Category | Number | % |
|---|---|---|---|
| **Education Level** | Ph.D. | 4 | 10.0 |
| | Master's | 6 | 15.0 |
| | Bachelor's | 18 | 45.0 |
| | Associate/Diploma | 11 | 27.5 |
| | Below Diploma | 1 | 2.5 |
| **Primary Occupation** | Rural Entrepreneurs | 13 | 32.5 |
| | Government Employees | 8 | 20.0 |
| | Local Officials | 6 | 15.0 |
| | Consultants/Experts | 7 | 17.5 |
| | Academics | 2 | 5.0 |
| | Other Professionals | 4 | 10.0 |

Table 2, illuminates the educational and professional composition of the sample, demonstrating a noteworthy educational attainment profile. The majority of participants (70%) held higher education qualifications (Bachelor's degree or above), with 25% possessing postgraduate degrees (Master's or Ph.D.). This educational profile suggests a well-qualified participant pool capable of providing informed perspectives on rural entrepreneurship dynamics. The occupational distribution reveals a strategic mix of stakeholders, with rural entrepreneurs forming the largest single group (32.5%), followed by government employees (20%), and a balanced representation of consultants/experts (17.5%) and local officials (15%). This diverse occupational composition enhances the study's ability to capture multiple perspectives on rural entrepreneurship challenges and opportunities.

**Table 3. Interview Characteristics**

| Characteristic | Mean | Range |
|---|---|---|
| Years of Experience | 14.6 | 4-30 |
| Interview Duration (minutes) | 56.4 | 30-98 |

Table 3, provides crucial methodological insights regarding the participants' experience levels and the depth of data collection. The mean professional experience of 14.6 years (range: 4-30 years) indicates a sample with substantial domain expertise. The interview duration data (mean: 56.4 minutes, range: 30-98 minutes) suggests thorough engagement with participants, allowing for in-depth exploration of research themes. The considerable variation in interview duration reflects the semi-structured nature of the interviews and the participants' varying levels of engagement with the research topics.

### 3.5 Data Analysis

Initially, the recorded interview transcripts were listened to multiple times to develop a familiarity with the underlying concepts and gain a deeper understanding of the themes and patterns within the data. This preliminary stage allowed the researchers to become acquainted with the context and nuances of the interviews, identifying their strengths and weaknesses. Following this, the recorded conversations were transcribed into written text. This transcription process was conducted with meticulous attention to detail to accurately reflect any changes in tone and sentiment expressed by the respondents. To ensure the accuracy of these transcripts, the text was read through multiple times from beginning to end. At this stage, researchers aided in identifying initial patterns and key themes within the text, developing a summary of the entire interview and its underlying flow. To analyze the collected data, thematic analysis was employed. This method enabled us to identify the main patterns and themes within the data. The transcribed data was carefully read word by word by the researchers, who had the ability to review the process and content up to four times. This repeated reading of the text helped researchers engage more deeply with the data and extract the main themes. Additionally, MAXQDA version 20 software was used to systematically code the data for thematic analysis. This software allowed researchers to code the data organized and systematically and identify patterns and connections between different themes. Using MAXQDA facilitated the coding process and enabled us to utilize its capabilities for deeper data analysis. Finally, by combining the results obtained from reading the text and systematic coding, we identified the main themes and patterns within the data, which significantly contributed to the theoretical and practical richness of the research. These steps helped us gain a better understanding of the data and enhanced the credibility and validity of the results (Rädiker, 2023).

## 4. Research Findings

social capital factors play a vital role in the success and sustainability of rural entrepreneurship, significantly influencing business outcomes in these areas. Qualitative data analysis reveals that trust between entrepreneurs and the rural community is fundamental to creating a sustainable entrepreneurial environment. When entrepreneurs trust the community and this trust is reciprocated, increased participation and effective collaboration can be observed. Active community involvement in economic and entrepreneurial projects contributes to the success and sustainability of these initiatives, facilitating equal access to resources and opportunities, strengthening local support networks, and fostering a sense of ownership and commitment to the community. Furthermore, teamwork and collective action are key factors in the success of rural entrepreneurship. Collaboration among entrepreneurs, sharing resources and experiences, and collective learning

can lead to increased innovation and productivity. This type of collaboration also contributes to building resilience and flexibility in the face of challenges and crises. The combination of these social factors can contribute to the creation of a strong and sustainable entrepreneurial ecosystem in rural communities. Improving social relationships and creating an environment filled with trust and cooperation can lead to the success and sustainability of entrepreneurship in these areas. To visually represent these findings, Figure 3 presents the themes, categories, and concepts extracted from the MAXQDA software, effectively illustrating the relationships between social elements and entrepreneurial success."

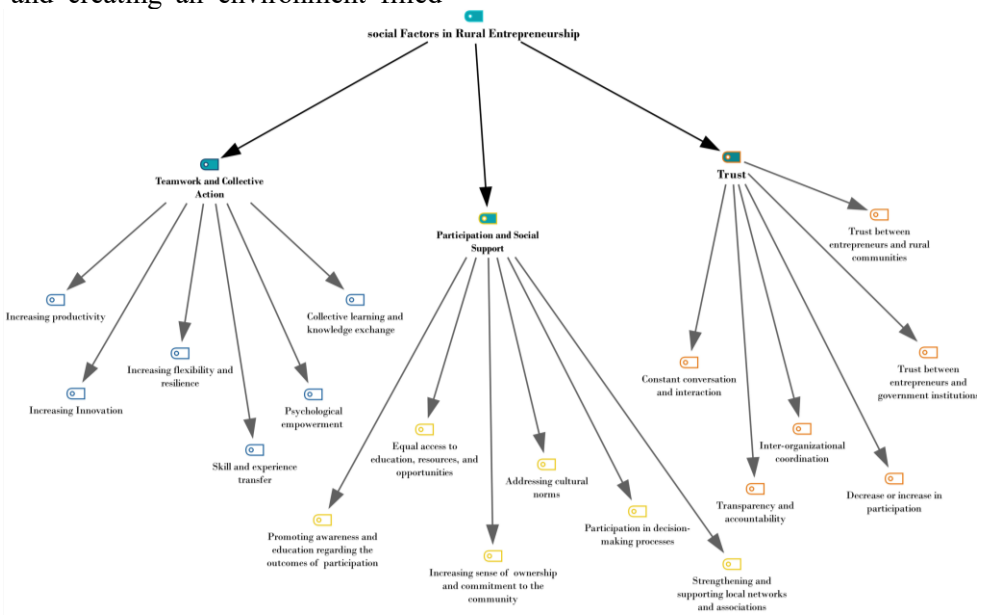


**Figure 3. Output of themes, categories and concepts from MAXQDA software**

Table 4 clearly shows the impact of social factors on entrepreneurial success by providing a comprehensive matrix of social theme codes related to rural entrepreneurship studies. This table categorizes key themes such as trust, participation and social support, and teamwork and collective action, and explains specific concepts within each category. In particular, trust as a foundation for building sustainable relationships between entrepreneurs and society plays a fundamental role in increasing participation and cooperation. Also, emphasizing the importance of support networks and education in strengthening the sense of ownership and commitment to society, shows the necessity of creating a successful and sustainable entrepreneurial environment in rural communities.

**Table4. Extracted Matrix of social Theme Codes for Rural Entrepreneurial Studies (MAXQDA)**

| theme | category | Concepts |
|---|---|---|
| social Factors in Rural Entrepreneurship | Trust | Trust between entrepreneurs and rural communities |
| | | Trust between entrepreneurs and government institutions |
| | | Trust within entrepreneurial networks |
| | | Decrease or increase in participation |
| | | Inter-organizational coordination |
| | | Transparency and accountability |
| | | Ongoing dialogue and interaction |
| | Participation and Social Support | Collaboration in economic and entrepreneurial projects |
| | | Participation in decision-making processes |
| | | Equal access to education, resources, and opportunities |
| | | Strengthening and supporting local networks and associations |
| | | Increasing sense of ownership and commitment to the community |

| theme | category | Concepts |
|---|---|---|
| | | Promoting awareness and education regarding the outcomes of participation |
| | | Addressing cultural norms |
| | Teamwork and Collective Action | Increasing Innovation |
| | | Increasing productivity |
| | | Psychological empowerment (responsibility, increased self-confidence, sense of competence, meaning, self-belief) |
| | | Skill and experience transfer |
| | | Collective learning and knowledge exchange |
| | | Increasing flexibility and resilience |
| | | Combining various skills and expertise |

Table 5 and Figure 4 further emphasize the comprehensive matrix of social themes codes, highlighting key findings related to the impact of social factors on entrepreneurial success. Based on this data, the category of 'trust,' occurring 20 times in the data, indicates the importance of establishing sustainable relationships between entrepreneurs and the community. Trust, as the foundation of social interactions, facilitates increased participation and strengthens cooperation within the rural community. The category of 'social participation and support,' with the highest frequency of 44 occurrences in the data, highlights the critical role of social participation and support in creating synergies and advancing entrepreneurial goals. This can lead to a strengthened sense of ownership and commitment among community members. Finally, the category of 'teamwork and collective action,' with a frequency of 27, underscores the importance of convergence and group actions in achieving entrepreneurial objectives. Teamwork, especially in rural communities with limited resources, can help optimize resource utilization and develop economic opportunities.

**Table 5. A quantitative analysis of social factors influencing rural entrepreneurship**

| Theme | Category | Frequency |
|---|---|---|
| social | Trust | 20 |
| | Social Participation and Support | 44 |
| | Teamwork and Collective Action | 27 |

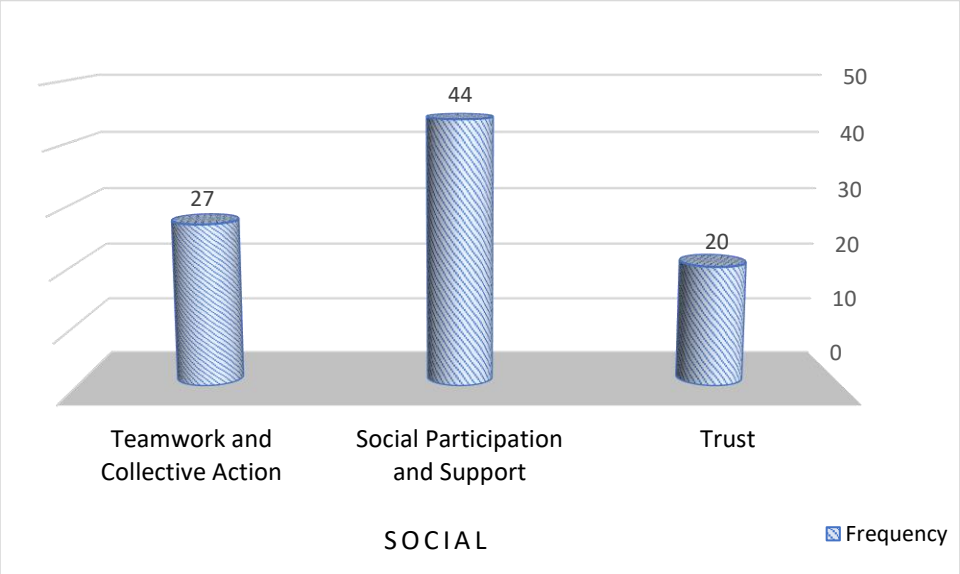


**Figure 4. A quantitative analysis of social factors influencing rural entrepreneurship**

***4.1 trust***

This research has revealed that trust is a fundamental and complex challenge in the path of developing and sustaining rural entrepreneurship. This finding aligns with Robert Putnam's social capital theory, which emphasizes the importance of trust as a cornerstone of social capital and its role in economic development. In the context of rural entrepreneurship, trust can be examined at three levels: trust between entrepreneurs and the rural community, trust between entrepreneurs and government institutions, and trust within entrepreneurial networks. One small business and rural business coach highlighted a crucial point:

> *"Entrepreneurship hasn't taken root well in our country, and everyone thinks that creating a job means entrepreneurship. Many have taken advantage of this confusion, creating the simplest of businesses and labeling them as entrepreneurial ventures to obtain benefits and funding from the government and organizations. This has led to the exploitation of rural people, causing them to lose trust and become wary of the term 'entrepreneurship.' This lack of trust has resulted in instability in rural areas regarding entrepreneurship."*

This quote effectively demonstrates how the misuse of the concept of entrepreneurship and the improper implementation of support programs can erode trust in rural communities. This issue is connected to the concept of institutional trust in social capital theory, which emphasizes the importance of citizens' trust in formal institutions. When institutional trust is weakened, participation in development programs and acceptance of new policies become problematic. Another expert pointed to the issue of inadequate training and projects without outcomes:

> *"Inadequate training, without considering the capacity of the rural region or market conditions, or defining entrepreneurial projects or employment creation projects based on incorrect assessments (solely to generate statistics and reports for higher-ups) and ultimately concluding the project without any benefits for the village, leads to frustration and a lack of trust in the government, organizations, and community-based institutions."*

This observation aligns with the concept of policy failure in rural development theories. When development policies and programs fail to achieve their objectives or even create negative impacts, not only are resources wasted, but the target community's trust is also undermined. This can lead to a vicious cycle where a lack of trust reduces participation in future programs, resulting in further failures of these programs. A village head emphasized the importance of building trust and the role of dialogue in this process:

> *"Building trust is crucial in the current situation. Now that the water has been taken from the eastern part of Zayandeh Rud due to poor management, there is no choice but to engage in dialogue between the people and representatives of organizations and the government (by raising the tolerance level of government representatives). Through dialogue, explaining the situation, outlining the existing solutions and processes to overcome the obstacles, we might be able to restore lost trust and engage people in solutions such as creating entrepreneurship based on local capacities."*

This perspective aligns with the communication for development theory, which emphasizes the importance of dialogue and two-way interaction in the development process. This approach believes that sustainable development is only possible when the target community actively participates in the decision-making and implementation processes, and this participation requires mutual trust. Experts in agriculture, extension, and entrepreneurship at the Ministry of Jihad-e-Agriculture pointed to the issue of the entry of unqualified organizations and their consequences:

> *"The entry of irrelevant and unqualified organizations such as governor's offices, welfare organizations, and which have entered this field under slogans like job creation and without considering the capacities of villages and existing resources, have only sought to*

*increase statistics and pass these statistics on to higher-level organizations. They have conducted business training and sometimes talent identification in rural areas, and then left the trained individuals to fend for themselves with dozens of problems in businesses that were created due to these unsupported trainings. The ultimate result is confusion and frustration imposed on the rural community, leading to a lack of trust in the government."*

This observation is related to the concept of inter-organizational coordination in public administration theories. A lack of coordination between different organizations and the entry of unqualified institutions into specialized areas can lead to resource waste, duplication of efforts, and ultimately a decrease in the effectiveness of development programs. This not only wastes resources but also undermines the trust of the target community. A former local manager referred to the issue of drought and its impact on trust between the people and the government:

*"Trust between the people and the government has been lost. Improper responses to water protests and the government's failure to respond to the drought, which was caused by mismanagement, have severed the connection between the people and the government."*

This quote effectively shows how the mismanagement of environmental crises can undermine trust between people and government. This issue is related to the concept of environmental governance, which emphasizes the importance of participatory and transparent management of natural resources. In order to better understand the impact of trust in rural entrepreneurship, Figure 5 examines this concept and their relationships.

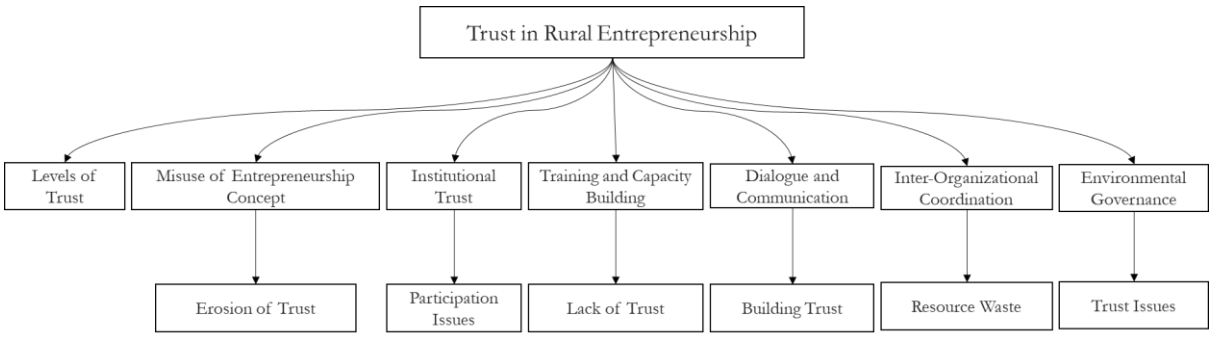


**Figure 5. Key relationships and different levels of trust in the development and sustainability of entrepreneurship in rural communities**

This figure includes different levels of trust, including trust between entrepreneurs and the rural community, as well as trust between entrepreneurs and government institutions. Also, it depicts the effects of misuse of the concept of entrepreneurship and weakness in institutional trust that can lead to reduced participation in development programs. In addition, the importance of dialogue and coordination between organizations has been emphasized as vital factors in building and maintaining trust in rural communities. These relationships represent a cycle of trust and distrust that can affect sustainable development in rural areas. In short, the analysis of the findings shows that the issue of trust in rural entrepreneurship is a multifaceted and complex challenge that is rooted in various factors. These factors include incorrect use of the concept of entrepreneurship, improper implementation of development programs, lack of inter-organizational coordination and improper management of environmental crises. To solve this problem, a comprehensive and systematic approach is needed, which includes:

1. Redefining the concept of rural entrepreneurship and providing a clear and operational definition of it.
2. Designing and implementing development programs based on the real needs and capacities of rural communities.

3. Establishing inter-organizational coordination and determining specific institutions for rural entrepreneurship programs.
4. Creating transparent mechanisms for accountability and monitoring the performance of responsible institutions.
5. Development of collaborative approaches in the management of natural resources and environmental crises.
6. Creating platforms for dialogue and continuous interaction between rural entrepreneurs, local community and government institutions.

By implementing these strategies, we can hope to restore part of the lost trust and create a platform for the sustainable development of rural entrepreneurship. But it should be noted that rebuilding trust is a time-consuming process and requires long-term commitment and sustainability in the implementation of policies and programs.

***4.2 Social Participation and Support***

This research indicates that social participation and culture play a vital role in the development and sustainability of rural entrepreneurship. These findings align with Robert Putnam's social capital theory and the community-based development theory, which emphasize the importance of social relationships, mutual trust, and collective participation in economic development. In the context of rural entrepreneurship, social participation and culture can be examined from several perspectives: cooperation in economic projects, participation in local decision-making, and the influence of cultural norms on entrepreneurial activities. An agricultural extension worker highlighted an important point about rural microfinance institutions:

> *"The lack of participation and cohesion among rural groups has led to the failure of rural microfinance institutions, which are essential for meeting the financial needs at the beginning of rural businesses, in most villages."*

This observation shows how a lack of participation can hinder the formation of local financial institutions that are essential for supporting entrepreneurship. Rural microfinance institutions are examples of community-based financial institutions that can play a significant role in financing small rural businesses. However, the success of these institutions depends on mutual trust and the active participation of community members. The failure of these institutions can be a sign of weak social capital in the rural community. Experts in agricultural education, extension, and entrepreneurship have pointed to the influence of subcultures on participation:

> *"Unfortunately, due to differences in beliefs and the existence of incorrect subcultures among villagers, it is not possible to create group businesses in the region."*

This observation aligns with the theory of entrepreneurial culture, which emphasizes the impact of cultural values and norms on entrepreneurial behaviors. Subcultures can act both as barriers and as facilitators of entrepreneurship. In this case, it seems that some subcultures prevent the formation of group collaborations that are necessary for the success of rural businesses. One agricultural manager refers to a change in approach in entrepreneurship programs:

> *"In recent years, the participation of rural people has increased compared to the past. The reason is that in the past, entrepreneurial programs were implemented top-down in a mandatory manner, but now most programs are bottom-up and in line with the demands of the people."*

This shift from top-down to participatory planning aligns with new rural development theories that emphasize the importance of the participation of local communities in the development process. This approach can lead to increased feelings of ownership and commitment to the community regarding entrepreneurial projects. The village head of one village pointed to differences in the level of participation in different projects:

> *"People's participation in work related to solving village problems or religious ceremonies is very good, but when entrepreneurial and employment projects are announced to the village council or related organizations, people are not willing to participate. The reason is the lack of trust in these projects because they have not had good results in the past."*

This observation shows that past experiences and trust in government institutions play a significant role in the willingness to participate in

entrepreneurial projects. This finding aligns with the theory of institutional trust, which emphasizes the importance of citizens' trust in formal institutions for the success of public policies. One expert and rural business coach emphasizes the importance of social support for entrepreneurs:

> *"For the sustainability of rural entrepreneurship, we need social support and participation, and for the rural community to believe in entrepreneurship and view an entrepreneur as a developer of the local economy and provide the necessary support."*

This view aligns with the theory of social networks in entrepreneurship, which emphasizes the importance of social relationships and community support in the success of entrepreneurs. Regarding the impact of culture on entrepreneurship, one entrepreneur and rural development expert refers to cultural challenges:

> *"Incorrect subcultures, patriarchy, tribalism, and lack of participation, lack of independence among young people and women, and lack of cooperation and participation in these areas create instability."*

This observation shows how cultural norms can hinder widespread participation in entrepreneurial activities. This finding aligns with the institutional theory of entrepreneurship, which emphasizes the impact of formal and informal institutions (including cultural norms) on entrepreneurial behaviors. An entrepreneur in the tourism sector refers to discrimination at the local level:

> *"There is a traditional view of issues and sometimes even discrimination in the village council and council. For example, if a creative and capable person is from a weak family, they are less willing to cooperate and support them."*

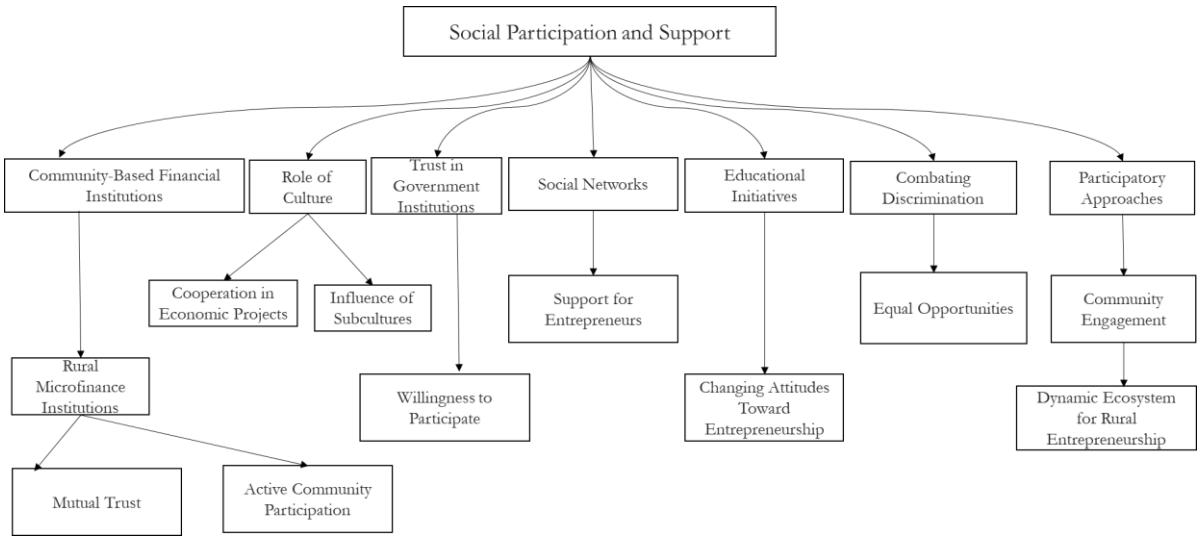


**Figure 6. Key relationships and different levels of Social Participation and Support in the development and sustainability of entrepreneurship in rural communities**

These findings underscore the pivotal role of social participation and local support in the formation and sustainability of rural entrepreneurship. As indicated, a lack of participation or low trust in entrepreneurial projects can hinder their success. To better understand this role, Figure 6 effectively illustrates the key interactions between various levels of social participation and support in the development and sustainability of rural entrepreneurship. this Figure showcases the vital role of social participation and support at different levels in the development and sustainability of rural entrepreneurship. This figure demonstrates the intricate interplay between participation in local decision-making, collaboration on economic projects, and support from formal and informal institutions. It also depicts key relationships among various stakeholders, including local councils, community-based financial institutions, and rural entrepreneurs. This diagram emphasizes the

significance of mutual trust, cultural values, and collective efforts in ensuring the sustainability of entrepreneurial ventures. Furthermore, reveals that bottom-up approaches can enhance a community's sense of belonging and ownership of entrepreneurial projects. also highlights barriers such as discrimination, unfavorable subcultures, and institutional distrust that negatively impact the dynamics of the rural entrepreneurial ecosystem. To address these obstacles and achieve a sustainable ecosystem, it is essential to emphasize the importance of social participation and trust-building. This research indicates that local power structures and social inequalities can hinder the flourishing of entrepreneurial talents in rural areas. Thus, data analysis suggests that social participation and culture play a decisive role in shaping and sustaining rural entrepreneurship. These factors can serve as both facilitators and barriers. To strengthen rural entrepreneurship, a comprehensive and multidimensional approach is required, encompassing the following:

1. Strengthening community-based financial institutions such as rural microfinance institutions.
2. Promoting an entrepreneurial culture and cooperation in rural communities.
3. Adopting participatory approaches in designing and implementing entrepreneurship programs.
4. Restoring trust between rural communities and government institutions.
5. Combating discrimination and inequality at the local level and creating equal opportunities for all.
6. Supporting social networks that support entrepreneurs.
7. Education and awareness-raising to change negative attitudes towards entrepreneurship.

By implementing these solutions, we can hope to increase social participation and foster a culture that supports entrepreneurship in rural communities. This can lead to the creation of a dynamic and sustainable ecosystem for rural entrepreneurship".

### *4.3 Teamwork and Collective Action*

The results of this research indicate that teamwork is a key factor in the success and sustainability of rural entrepreneurship. This finding aligns with modern entrepreneurship theories, including the team entrepreneurship theory and the social capital theory. In rural contexts, teamwork can serve as a powerful social mechanism to overcome resource constraints, enhance innovation, and create a competitive advantage. One small business and rural business coach notes:

> *"At the beginning of every entrepreneurial cycle, there must be an entrepreneur or an entrepreneurial team."*

This statement suggests that teamwork is important from the very beginning of the entrepreneurial process. This view is consistent with the founder team theory which emphasizes the importance of combining different skills and expertise in the early stages of business formation. In rural environments, which typically face limited resources and access to various expertise, the formation of entrepreneurial teams can be a way to compensate for these limitations. An agricultural extension worker state:

> *"Instability in rural businesses and sometimes failure in them is due to various reasons, one of the most prominent of which is the lack of coordination, support, participation, and teamwork in villages".*

This observation clearly demonstrates that the lack of teamwork can lead to the instability of rural businesses. This finding is consistent with Michael Porter's competitive advantage theory, which emphasizes the importance of internal cooperation and coordination to create a competitive advantage. In rural environments, which typically face numerous challenges, teamwork can serve as a strategy to increase business flexibility and resilience. Another small business and rural business coach states:

> *"To empower and create sustainable entrepreneurship, we need knowledge, skills, teamwork, and learning models for communication."*

This perspective shows that teamwork is not only an operational strategy but also an essential social skill for rural entrepreneurs. This finding aligns with the organizational learning theory, which emphasizes the importance of collective learning and knowledge sharing within organizations. In rural environments, which typically have limited access to formal educational resources, teamwork

can serve as a mechanism for continuous learning and skill transfer. An agricultural extension worker - a rural business specialist - states:

> *"Lack of cooperation and participation due to beliefs and cultural conditions among villagers prevents everyone from taking advantage of the created opportunities."*

This observation points to cultural challenges to teamwork. This finding is consistent with the organizational culture theory, which emphasizes the impact of cultural values and norms on organizational behavior. In rural environments, which typically have strong social and cultural structures, promoting a culture of teamwork may face challenges and require targeted efforts to change social attitudes and behaviors. The agricultural extension worker - a rural business specialist - adds:

> *"The existence of a work team in any business is considered one of the advantages of that business. Membership in a team empowers individuals and increases their self-confidence, something that we need in the villages of the eastern margin of the Zayandeh River at this time."*

This perspective refers to the psychological aspects of teamwork. This finding is consistent with the psychological empowerment theory, which emphasizes the importance of feelings of meaning, competence, autonomy, and impact in the workplace. In rural environments, where individuals may face challenges with self-confidence and self-belief, teamwork can serve as a mechanism to increase self-confidence and psychological empowerment. One entrepreneur says:

> *"I would really like to join a group or team where we can divide the work and each person takes on a responsibility, so that everyone can do their job based on their ability and not worry about other parts of the work and production."*

These findings align with Adam Smith's theory of division of labor, highlighting the operational benefits of teamwork and specialized tasks for increased efficiency. In rural settings, often characterized by a limited supply of skilled labor, teamwork and division of labor can optimize the utilization of available human resources. To better understand the impact of teamwork and collective action on rural entrepreneurship, Figure 7 explores these concepts and their interconnections. The figure emphasizes the importance of teamwork and collective action in the success and sustainability of rural entrepreneurial ventures. At the heart of this figure lies the concept of "teamwork," identified as a key factor in overcoming challenges and resource constraints.

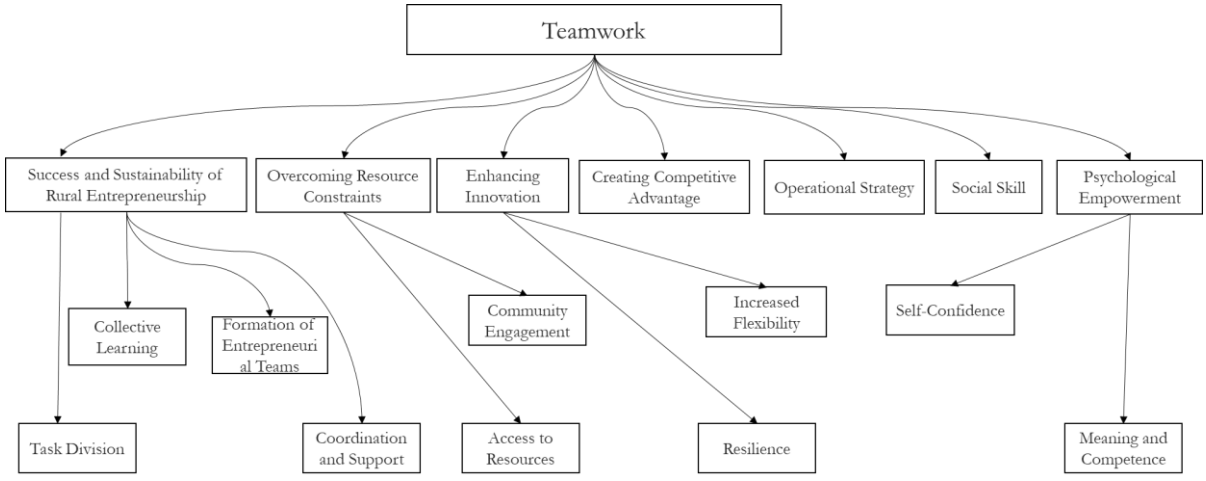


**Figure 7: Key relationships and different levels Teamwork in the development and sustainability of entrepreneurship in rural communities**

Teamwork fosters the creation of sustainable and successful businesses in rural communities, and collaboration within teams can facilitate better allocation and management of limited resources.

This type of collaboration also stimulates innovation and the generation of creative ideas in the entrepreneurial realm, enabling businesses to gain a competitive edge. Moreover, teamwork enhances individuals' social and communication skills, and a sense of belonging to a team can boost self-confidence and motivation. Ultimately, the figure demonstrates that teamwork not only improves business performance but also creates a supportive and innovative environment in rural communities. In summary, the analysis of these findings reveals that teamwork is a vital component of the success and sustainability of rural entrepreneurship. It can serve as a social strategy to overcome resource constraints, foster innovation, improve efficiency, and empower individuals. However, promoting a culture of teamwork in rural settings may face challenges. To strengthen teamwork in rural entrepreneurship, the following strategies are suggested:

1. Providing teamwork skills training to rural entrepreneurs
2. Creating incentives for the formation of entrepreneurial teams in villages
3. Promoting a culture of cooperation and participation in rural communities
4. Supporting the formation of cooperatives and other forms of collective businesses in villages
5. Creating opportunities for experience exchange and mutual learning among rural entrepreneurs
6. Designing mentoring and coaching programs with an emphasis on teamwork skills

By implementing these strategies, it is hoped that a culture of teamwork can be fostered in rural communities, allowing rural entrepreneurs to leverage its benefits for the success and sustainability of their businesses.

## 5. Discussion and Conclusion

### *5.1 Theoretical Implications of the Research*

This research contributes significantly to the theoretical understanding of rural entrepreneurship sustainability, particularly in the context of challenging environmental and economic conditions. The study's theoretical implications are multifaceted and offer novel insights into the complex interplay of social factors influencing rural entrepreneurship.

The study presents an integrated conceptual model that combines various social factors affecting rural entrepreneurship sustainability. This model advances beyond the existing literature, which often examines these factors in isolation(Fitzpatrick et al., 2023). By demonstrating the interconnectedness of social capital, social participation, social support, and teamwork, the research provides a more holistic understanding of the social ecosystem surrounding rural entrepreneurship. This integrated approach allows for a more nuanced analysis of how these factors collectively contribute to entrepreneurial resilience and sustainability in rural areas .The research extends Robert Putnam's social capital theory by adapting it specifically to the context of rural entrepreneurship in environmentally challenged areas. While Putnam's theory emphasizes trust and social connections in economic development(Prince, 2024), this study demonstrates how these elements manifest uniquely in rural entrepreneurial settings facing environmental crises. This contextualization enhances our understanding of how social capital operates under resource constraints and environmental pressures.

A key theoretical contribution is the development of the "social-entrepreneurial resilience" concept. This novel construct bridges the gap between social resilience theories and entrepreneurship literature, offering a new perspective on how rural communities leverage social factors to maintain entrepreneurial activities in the face of environmental and economic challenges. This concept builds on existing resilience theories(Yang et al., 2022) but specifically focuses on the entrepreneurial context in rural areas .The research proposes a dynamic model that illustrates how the importance and role of social factors evolve throughout different stages of rural entrepreneurship development. This temporal perspective addresses a gap in the current literature, which often provides static views of social factors (Li et al., 2022). By demonstrating the changing dynamics of social capital, participation, and teamwork over time, the study offers a more realistic and nuanced understanding of rural entrepreneurship processes. The study innovatively incorporates cultural norms and local power structures into the social capital framework for rural entrepreneurship. This integration extends

beyond traditional social capital theories by highlighting how cultural factors and power dynamics uniquely shape the effectiveness of social capital in rural entrepreneurial contexts(Amblard, 2021). This expanded framework provides a more comprehensive understanding of the sociocultural environment in which rural entrepreneurship operates .A significant theoretical contribution lies in bridging the gap between government policies and social dynamics in rural entrepreneurship sustainability. The research develops a theoretical framework that explains how policy interventions interact with and influence social factors to affect entrepreneurial outcomes. This integration addresses a critical gap in the literature, which often treats policy and social factors as separate domains(Chenavaz et al., 2023). The study extends team entrepreneurship theory by adapting it to the unique context of rural areas. It demonstrates how collective action and teamwork operate differently in resource-constrained rural environments compared to urban settings. This adaptation provides new insights into how rural entrepreneurs leverage teamwork to overcome resource limitations and enhance innovation(Cardon et al., 2017). The research develops a theoretical framework for understanding how environmental crises, particularly water scarcity, impact the social dynamics of rural entrepreneurship. This framework extends existing theories on entrepreneurship in crisis situations by specifically focusing on the interplay between environmental challenges and social factors in rural contexts (Yang et al., 2022). this research significantly advances the theoretical understanding of rural entrepreneurship sustainability by offering an integrated, dynamic, and contextualized model of social factors. The development of the "social-entrepreneurial resilience" concept, the integration of cultural and power structures into social capital theory, and the bridging of policy with social dynamics represent novel contributions to the field. These theoretical advancements provide a robust foundation for future research and offer valuable insights for developing more effective policies and interventions to support sustainable rural entrepreneurship, particularly in environmentally challenged areas.

***5.2 Practical Implications of the Research***

This research offers significant practical implications for policymakers, rural development practitioners, and entrepreneurs, particularly in addressing the challenges of sustainable rural entrepreneurship in environmentally stressed areas. The study's innovative approach provides actionable insights that can enhance the effectiveness of rural entrepreneurship initiatives. The integrated model of social factors developed in this study enables policymakers to design more targeted and effective interventions. By understanding the complex interplay between social capital, participation, support, and teamwork, policymakers can craft multifaceted strategies that address multiple dimensions simultaneously. For instance, policies could be designed to not only provide financial support but also to strengthen local social networks and encourage community participation (Zhao & Li, 2021). This holistic approach represents a significant advancement over traditional, single-faceted policy interventions. The research highlights the critical role of community engagement in sustaining rural entrepreneurship. Practitioners can use these findings to develop more effective community involvement strategies. For example, the study suggests innovative approaches to fostering trust and participation, such as creating local entrepreneurship councils that involve diverse community members in decision-making processes (Korsgaard et al., 2015). This approach goes beyond traditional top-down development models, emphasizing the importance of bottom-up, community-driven initiatives.

The dynamic model of social factors throughout the entrepreneurship lifecycle provides a framework for creating adaptive support mechanisms. Support programs can be tailored to the specific needs of entrepreneurs at different stages of their journey. For instance, early-stage support might focus on building social networks and trust, while later-stage support could emphasize collective action and knowledge sharing (Li et al., 2022). This adaptive approach represents a novel shift from one-size-fits-all support programs. By integrating cultural norms and local power structures into the social capital framework, the study emphasizes the need for culturally sensitive entrepreneurship programs. Practitioners can use these insights to design initiatives that are

better aligned with local cultural contexts, potentially increasing their acceptance and effectiveness. This could involve innovative approaches such as incorporating traditional leadership structures into modern entrepreneurial networks (Amblard, 2021). The concept of "social-entrepreneurial resilience" developed in this study offers practical tools for building resilience in rural entrepreneurial ecosystems. Practitioners can focus on strengthening the social fabric of communities as a means of enhancing their ability to withstand environmental and economic shocks. This could involve innovative resilience-building activities such as community-wide scenario planning exercises or the establishment of local resource-sharing networks (Yang et al., 2022). The research's findings on the importance of teamwork and collective action in rural settings provide a basis for developing new collaborative entrepreneurship models. Practitioners can use these insights to foster innovative forms of cooperation, such as rural entrepreneurship clusters or cooperative business models that leverage collective resources and skills (Cardon et al., 2017). The study's framework for understanding the interaction between government policies and social dynamics offers a new approach to policy implementation. Policymakers can use this insight to create more synergistic relationships between formal institutions and informal social structures. For example, this could involve innovative approaches to co-creating policies with local communities or establishing feedback mechanisms that allow for continuous policy refinement based on social impacts (Chenavaz et al., 2023). The research provides practical strategies for maintaining entrepreneurial activities in the face of environmental challenges, particularly water scarcity. This includes innovative approaches to resource management, such as community-based water conservation initiatives linked to entrepreneurial activities or the development of businesses that directly address environmental challenges (Bao et al., 2022).

The study's detailed analysis of social capital dynamics in rural entrepreneurship contexts provides a foundational framework for developing targeted assessment tools and interventions. This framework enables practitioners to systematically evaluate and monitor social capital formation in rural communities, particularly in areas facing environmental challenges like water scarcity. The research findings suggest innovative approaches for measuring social capital through participatory assessment methods that capture both structural elements (such as network relationships and institutional linkages) and cognitive components (including trust levels and shared norms) that influence entrepreneurial sustainability. The integrated conceptual model developed through this research emphasizes the critical role of multi-stakeholder collaboration in fostering sustainable rural entrepreneurship. This model can inform the development of coordinated support mechanisms that align government policies, private sector initiatives, and community-based organizations toward common entrepreneurial development goals. Such collaborative frameworks are especially relevant for regions like the eastern margin of Zayandeh River, where environmental pressures necessitate innovative approaches to rural economic development.

this research advances both theoretical understanding and practical applications in rural entrepreneurship development by revealing the complex interplay between social factors and entrepreneurial sustainability. By demonstrating how trust, social participation, and collective action influence entrepreneurial outcomes in environmentally challenged areas, the study provides policymakers and practitioners with evidence-based insights for designing context-appropriate interventions. These findings contribute to the broader goal of fostering resilient rural economies through socially embedded entrepreneurship initiatives that respond to local environmental and economic challenges

### *5.3 Research Limitations*

Despite its efforts to provide a comprehensive view of the social factors affecting rural entrepreneurship, this study has faced several limitations. First, the focus on a specific region (east of Zayandeh Rud) may limit the generalizability of findings to other rural areas with different economic, social, and environmental conditions. Second, while the qualitative nature of the research allows for a deeper understanding of phenomena, it may fall short in providing a quantitative and generalizable picture of the rural entrepreneurship situation. Third, the study's time constraints prevented examining long-term changes in entrepreneurial attitudes and behaviors

in rural communities. Finally, despite efforts to include diverse perspectives, some key stakeholders or marginalized groups may have been overlooked in the sampling process. When interpreting the results and applying the findings to other contexts, these limitations should be considered.

***5.4 Suggestions for Future Studies***

Based on the findings and limitations of this research, several avenues for future studies are proposed. First, conducting comparative studies across different rural regions could enhance understanding of how local conditions impact rural entrepreneurship. Second, combining quantitative and qualitative methods in a mixed-methods research design could provide a more comprehensive picture of the rural entrepreneurship landscape. Third, longitudinal studies to examine changes in entrepreneurial attitudes and behaviors over time are recommended. Fourth, a specific focus on particular groups such as rural women, youth, or ethnic minorities could provide valuable insights into the unique challenges and opportunities these groups face. Fifth, a more detailed examination of the relationship between government policies, support programs, and rural entrepreneurship success could help develop more effective strategies. Finally, studying the impact of new and digital technologies on rural entrepreneurship could offer fresh perspectives on rural development in the digital age. These suggested research directions could significantly contribute to a more nuanced and actionable understanding of rural entrepreneurship dynamics.

**Acknowledgments**

The current paper is extracted from the doctoral dissertation of the first author (Soulmaz Dorri Sede) in Geography and planning, Tarbiat Madras University, Tehran, Iran.

**Authors′ contributions**

The authors equally contributed to the preparation of this article.

**Conflict of interest**

The authors declare no conflict of interest.

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*Journal of Research and Rural Planning*
Volume 13, No. 4, Autumn 2024, Serial No. 47, Pp. 39-63
**eISSN: 2783-2007** **ISSN: 2783-2791**
http://jrrp.um.ac.ir

**Original Article**

# نقش سرمایه اجتماعی در پایداری کارآفرینی روستایی (مطالعه موردی: شرق حاشیه رودخانه زاینده‌رود، اصفهان)

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## چکیده مبسوط

### ۱. مقدمه

این پژوهش به بررسی نقش سرمایه اجتماعی در پایداری کارآفرینی روستایی در حاشیه شرقی زاینده‌رود اصفهان می‌پردازد. با توجه به چالش‌های زیست‌محیطی و اقتصادی ناشی از کمبود آب در این منطقه، توسعه کارآفرینی روستایی به عنوان راهکاری برای تنوع‌بخشی به اقتصاد روستایی و ایجاد فرصت‌های درآمدی پایدار مطرح شده است. منطقه حاشیه شرقی زاینده‌رود با سابقه‌ای حدود ۵۰۰ ساله در بهره‌برداری از آب رودخانه برای کشاورزی و دامداری، یکی از قطب‌های کشاورزی ایران و مرکز فعالیت‌های مرتبط با آب بوده است. اما در دهه اخیر، به دلیل بحران خشکسالی و کاهش چشمگیر جریان زاینده‌رود، با چالش‌های جدی مواجه شده است. این وضعیت منجر به کاهش ظرفیت تولید اراضی کشاورزی و باغات سنتی، بیکاری گسترده، مهاجرت روستا-شهری و افت شدید سطح درآمد و رفاه در این جوامع روستایی شده است. در چنین شرایطی، دولت به توسعه کارآفرینی روستایی به عنوان راه‌حلی مناسب برای مقابله با چالش‌های اقتصادی و اجتماعی این مناطق روی آورده است. هدف این مطالعه، ارائه یک مدل مفهومی یکپارچه برای درک بهتر عوامل اجتماعی موثر بر پایداری کارآفرینی روستایی و ارائه راهکارهایی برای تقویت این عوامل است.

### ۲. مبانی نظری تحقیق

چارچوب نظری این پژوهش بر اساس نظریه سرمایه اجتماعی رابرت پاتنام، نظریه توسعه مبتنی بر اجتماع و نظریه‌های کارآفرینی تیمی شکل گرفته است. نظریه سرمایه اجتماعی پاتنام بر اهمیت اعتماد و ارتباطات اجتماعی در توسعه اقتصادی تاکید دارد و پیشنهاد می‌کند که جوامع با سطح بالای سرمایه اجتماعی در ایجاد و حفظ کسب و کارهای نوآورانه و اجتماعی موفق‌تر هستند. نظریه توسعه مبتنی بر اجتماع بر اهمیت مشارکت فعال جامعه محلی در فرآیندهای تصمیم‌گیری و اجرای پروژه‌های توسعه تاکید دارد. نظریه‌های کارآفرینی تیمی نیز بر اهمیت همکاری و ترکیب مهارت‌های مختلف در موفقیت کسب و کارها تاکید دارند. این چارچوب بر اهمیت اعتماد، مشارکت اجتماعی و کار تیمی در موفقیت و پایداری کسب و کارهای روستایی تاکید دارد. همچنین، نقش هنجارهای فرهنگی و ساختارهای قدرت محلی در شکل‌دهی به رفتارهای کارآفرینانه مورد توجه قرار گرفته است. این چارچوب نظری یکپارچه به ما کمک می‌کند تا درک جامع‌تری از پویایی‌های اجتماعی موثر بر کارآفرینی روستایی داشته باشیم.

### ۳. روش تحقیق

این مطالعه با رویکرد کیفی و با استفاده از روش نظریه زمینه‌ای انجام شده است. روش نظریه زمینه‌ای امکان کشف و توسعه نظریه‌های جدید بر اساس داده‌های واقعی را فراهم می‌کند و برای مطالعه پدیده‌های پیچیده اجتماعی مانند کارآفرینی روستایی مناسب است. داده‌ها از طریق مصاحبه‌های نیمه‌ساختاریافته با ۴۰ نفر از ذینفعان کلیدی شامل کارآفرینان روستایی، مدیران محلی، کارشناسان توسعه روستایی و مربیان کسب و کار جمع‌آوری شده است. نمونه‌گیری به روش گلوله برفی انجام شده و تا رسیدن به اشباع نظری ادامه یافته است. مصاحبه‌ها شامل ۱۴ سوال نیمه‌ساختاریافته بوده و به صورت حضوری یا تلفنی انجام شده است. تحلیل داده‌ها با استفاده از نرم‌افزار MAXQDA و روش کدگذاری باز، محوری و انتخابی انجام شده

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است. در مرحله کدگذاری باز، مفاهیم اولیه از داده‌ها استخراج شده، در مرحله کدگذاری محوری، این مفاهیم در قالب مقوله‌های اصلی دسته‌بندی شده و در نهایت در مرحله کدگذاری انتخابی، ارتباط بین این مقوله‌ها در قالب یک مدل نظری ارائه شده است.

## ۴. یافته های تحقیق

یافته‌های پژوهش نشان می‌دهد که اعتماد، مشارکت اجتماعی و کار تیمی نقش کلیدی در موفقیت و پایداری کارآفرینی روستایی دارند. اعتماد بین کارآفرینان و جامعه روستایی، اعتماد بین کارآفرینان و نهادهای دولتی، و اعتماد درون شبکه‌های کارآفرینی از عوامل مهم در ایجاد محیط کارآفرینی پایدار هستند. نتایج نشان می‌دهد که سوء استفاده از مفهوم کارآفرینی و اجرای نادرست برنامه‌های حمایتی منجر به کاهش اعتماد در جوامع روستایی شده است. همچنین، مدیریت نادرست بحران‌های زیست‌محیطی مانند خشکسالی، اعتماد بین مردم و دولت را تضعیف کرده است. مشارکت فعال جامعه در پروژه‌های اقتصادی و کارآفرینی منجر به دسترسی برابر به منابع و فرصت‌ها، تقویت شبکه‌های حمایتی محلی و افزایش حس مالکیت و تعهد به جامعه می‌شود. با این حال، هنجارهای فرهنگی نامناسب مانند مردسالاری و قبیله‌گرایی مانع از مشارکت گسترده در فعالیت‌های کارآفرینانه می‌شوند. همکاری و کار تیمی بین کارآفرینان نیز منجر به افزایش نوآوری، بهره‌وری و انعطاف‌پذیری در مواجهه با چالش‌ها می‌شود. کار تیمی نه تنها یک استراتژی عملیاتی، بلکه یک مهارت اجتماعی ضروری برای کارآفرینان روستایی است که می‌تواند به عنوان مکانیسمی برای یادگیری مداوم و انتقال مهارت عمل کند.

## ۵. بحث و نتیجه‌گیری

بر اساس یافته‌های این پژوهش، راهکارهایی برای تقویت سرمایه اجتماعی و بهبود پایداری کارآفرینی روستایی ارائه شده است. این راهکارها شامل تقویت نهادهای مالی اجتماع‌محور مانند صندوق‌های خرد روستایی، ترویج فرهنگ کارآفرینی و همکاری در جوامع روستایی، اتخاذ رویکردهای مشارکتی در طراحی و اجرای برنامه‌های کارآفرینی، بازسازی اعتماد بین جوامع روستایی و نهادهای دولتی، مبارزه با تبعیض و نابرابری در سطح محلی، حمایت از شبکه‌های اجتماعی حامی کارآفرینان و آموزش و آگاهی‌سازی برای تغییر نگرش‌های منفی نسبت به کارآفرینی است. همچنین، ایجاد پلتفرم‌هایی برای گفتگو و تعامل مداوم بین کارآفرینان روستایی، جامعه محلی و نهادهای دولتی پیشنهاد می‌شود. در زمینه کار تیمی، ارائه آموزش‌های مهارت‌های کار تیمی به کارآفرینان روستایی، ایجاد مشوق‌هایی برای تشکیل تیم‌های کارآفرینی در روستاها، حمایت از تشکیل تعاونی‌ها و دیگر اشکال کسب و کارهای جمعی در روستاها، و طراحی برنامه‌های منتورینگ و کوچینگ با تاکید بر مهارت‌های کار تیمی پیشنهاد می‌شود. اجرای این راهکارها می‌تواند به ایجاد یک اکوسیستم پویا و پایدار برای کارآفرینی روستایی کمک کند. با این حال، باید توجه داشت که بازسازی اعتماد و تغییر فرهنگی فرآیندی زمان‌بر است و نیازمند تعهد بلندمدت و پایداری در اجرای سیاست‌ها و برنامه‌هاست. همچنین، این مطالعه پیشنهاد می‌کند که سیاست‌گذاران باید رویکردهای جامع و چندبعدی را در توسعه کارآفرینی روستایی اتخاذ کنند که نه تنها جنبه‌های اقتصادی، بلکه ابعاد اجتماعی و فرهنگی را نیز در نظر بگیرند.

**کلیدواژه‌ها:** سرمایه اجتماعی، کارآفرینی روستایی، اعتماد، مشارکت اجتماعی، کار تیمی، زاینده‌رود.

## تشکر و قدرانی

پژوهش حاضر برگرفته از رساله دکتری نویسنده اول (سولماز دری سده) گروه جغرافیا و برنامه‌ریزی دانشگاه تربیت مدرس، تهران، ایران است.

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**How to cite this article:**
Dorri Sede, S., Pourtaheri , M., & Torabi, Z. (2024). The Role of social capital in the sustainability of rural entrepreneurship (Case study: The Eastern Margin of Zayandeh River, Isfahan). *Journal of Research & Rural Planning, 13*(4), 39-63.
http://dx.doi.org/10.22067/jrrp.v13i4.2410-1113

**Date:**
*Received: 28-11-2024*
*Revised: 10-01-2025*
*Accepted: 31-01- 2025*
*Available Online: 31-01-2025*

*Journal of Research and Rural Planning*
Volume 13, No. 4, Autumn 2024, Serial No. 47, Pp. 65-80
**eISSN: 2783-2007** **ISSN: 2783-2791**
http://jrrp.um.ac.ir
**Original Article**

# Explaining the Effects of Rural - Urban Linkages on Changing the Rural Lifestyle (Case Study: Lasht-e Nesha District, Guilan, Iran)

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## Abstract

**Purpose-**Various factors influence changes in rural lifestyles, with one of the most important being rural-urban linkages. The aim of this paper is to examine the role of rural-urban linkages in changing the lifestyle of rural households across three dimensions: social, economic, and cultural.

**Design/methodology/approach-** The research method is descriptive-analytical, and data collection was conducted through library research for theoretical studies and via questionnaires for the field study. The statistical population includes the villages of the Lasht Nesha district in Rasht County. A sample of 360 respondents was selected using Cochran's formula and a simple random sampling method. Data were analyzed using linear regression and multivariate regression tests.

**Finding-** The research findings regarding the linear relationship between rural-urban linkages and changes in rural household lifestyles revealed a significant relationship between these two variables. Additionally, the results showed that the most significant impacts of rural-urban linkages were in the cultural, social, and economic dimensions, respectively. Specifically, in the cultural dimension, consumerism and cultural and linguistic changes were most prominent; in the social dimension, changes in clothing and behavior; and in the economic dimension, materialism, wealth accumulation, and income generation experienced the greatest changes.

**Keywords**- Rural-urban linkages, lifestyle, rural development, Lasht Nesha.

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**How to cite this article:**
Asheri-Gafsheh, E., & Yasouri, M. (2024). Explaining the effects of rural - urban linkages on changing the rural lifestyle (Case study: Lasht-e Nesha District, Guilan, Iran). *Journal of Research & Rural Planning, 1*3(4), 65-80.
http://dx.doi.org/10.22067/jrrp.v13i4.2408-1106

**Date:**
*Received: 14-11-2024*
*Revised: 16-01-2025*
*Accepted: 11-03- 2025*
*Available Online: 11-03-2025*

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## 1.Introduction

Research on lifestyle is often regarded as an interdisciplinary field of study. Lifestyle is the result of the combination of motivations, characteristics, interests, values, and thoughts that manifest in a person's behavior, and ultimately in the behavior of a family and society. The discussions around the concept of lifestyle, both theoretical and empirical, tend to focus on individualism, especially in urban areas. However, the characteristics of rural lifestyle—such as production, work, values, traditions, and their continuity, as well as cooperation and solidarity—highlight the necessity of this discussion. Furthermore, cultural, social, and economic changes over recent decades have greatly impacted rural lifestyles (Khorasidi et al., 2017).

There are various perspectives on lifestyle. From Weber's perspective, lifestyle consists of shared values and customs that provide a group with a sense of collective identity. According to Bourdieu, lifestyle is a set of systematic activities derived from an individual's taste and preference, which are primarily external and objective but also symbolically grant identity to the individual, creating distinctions between different social classes (Bourdieu, 1984).

Lifestyle encompasses consumption patterns, production and labor, capital, nutrition methods, types of clothing, housing, household items, leisure activities, speaking styles and etiquette, interests, attitudes, and spiritual and moral matters (Jabaran, 2016). Several factors influence rural lifestyle, including economic, social, environmental, and technological elements that shape the living conditions and sustainability of rural communities. A critical review of these factors is necessary for developing effective strategies that promote resilience and progress in rural areas. Economic factors include the availability of agricultural resources, access to markets, and supportive infrastructure, all of which contribute to the economic stability of rural households (Annamalai et al., 2013). Social factors, such as education, access to healthcare, and social networks, significantly impact the social fabric and collective efficacy of rural populations (Flamez et al., 2017).

As mentioned earlier, various factors influence lifestyle, especially in rural areas. One such factor is globalization. Globalization has had diverse effects on lifestyle changes, particularly by expanding social inequalities under modernity. In fact, one of the critical issues in the modern era is the process of globalization and its impact on people's beliefs, values, and lifestyles across different societies. The rapid and astonishing growth of information and communication technologies, such as satellites, the internet, and mobile phones, has brought different cultures and religions closer together, profoundly destabilizing their absolutism.

In recent decades, rural lifestyle has undergone significant changes, affecting not only consumption patterns but also traditions, beliefs, values, ideals, norm acceptance, and norm formation, ultimately altering lifestyle as a whole. In these areas, consumption patterns, household goods, home decor, food, and clothing have changed drastically. These changes have occurred at a faster pace in rural communities compared to urban areas. Rural areas have increasingly adopted modern amenities and technologies such as electricity, communication devices like television and satellite, internet coverage, cars, household appliances, and architectural and housing transformations, along with the growth of rural tourism. Access to modern technological achievements and communication facilities has led rural areas to experience a substantial shift from traditional lifestyles to more modern ones. Factors such as the introduction of modern amenities, the rising education levels of rural residents, generational replacements, the implementation of service and infrastructure projects in villages, and access to communication infrastructure have played a major role in these transformations. The migration flow between urban and rural areas, the expansion of media, higher education opportunities, and technological advancements have all influenced the perspectives, relationships, and lifestyles of rural residents, further accelerating the changes in traditional lifestyles (Bahrami Vala, Sonia, 2014). Studies show that economic, cultural, and social factors have played the most significant roles in changing the lifestyle of rural communities in Iran (Yousefnia & Haghighatian, 2016).

Among the factors influencing lifestyle, rural-urban linkages stand out. These linkages are defined as continuous networks of relationships and interactions between spaces and dimensions,

forming a linear relationship between rural and urban areas (Christiaensen & Kanbur, 2018). Rural-urban linkages result from the two-way interaction between rural settlements and urban centers in regional supply chains (Sanaei Moghaddam et al., 2016). These linkages indicate the interdependent and integrated nature of urban and rural development. The connections and relationships between cities and villages occur through the movement of people, goods, money, information, and various occupational patterns (Farid, 1994). Rural-urban linkages arise due to the various flows between villages and cities, significantly contributing to rural development (Bahrami, 2019). These linkages, due to their close interactions, have significant impacts on both rural and urban areas (Agergaard et al., 2019). On the other hand, ignoring the relationship between cities and villages leads to inequality and inefficiency in spatial development processes (Akkoyunlu, 2015). Hence, understanding and explaining the general principles governing rural-urban linkages within the framework of human-environment interactions is a geographic subject of significant theoretical and practical importance (Ahmadi et al., 2019). Therefore, analyzing rural-urban interactions, especially in the context of sustainable development, is crucial (Mayer et al., 2016). It can thus be concluded that rural development and transformations in the lives of rural residents are achieved when mutual connections exist between rural and urban areas. Consequently, urban development is realized through rural development, and the improvement of rural quality of life is achieved through urban development.

In the study area, Lasht Nesha district of Rasht County, there is a close and reciprocal relationship between urban and rural areas. The transformations in rural settlements are dependent on a set of internal and external factors, all of which stem from the interaction and connection between urban and rural settlements. Rural areas, in terms of economic, social, and physical development, are dependent on the growth of urban areas. Urban areas are also reliant on rural areas for trade, especially in primary agricultural and livestock products. Similarly, rural development in this region is dependent on urban development, and various forms of connections exist between these areas. All these factors indicate a strong relationship between urban and rural development. The existence of rural-urban linkages, resulting from various flows between villages and cities, may also have a significant impact on the quality of life in rural areas and changes in the lifestyles of rural households, as noted by various researchers.

This study seeks to answer the following questions:

1. What is the relationship between rural-urban linkages and changes in the lifestyle of rural residents in the region?
2. Which aspects of rural lifestyle are most affected by rural-urban linkages?

## 2. Research Theoretical Literature

A review of studies on the impact and role of rural-urban linkages in rural development shows that various studies have been conducted in this area. Below are some of the studies and their findings. However, the review of existing studies indicates that no research has been conducted specifically on the role of rural-urban linkages in changing the lifestyle of rural households. For example, Ojagh et al. (2021) examined the role of rural-urban linkages in economic transformations and poverty reduction in rural areas of Iran. Their findings showed that the formation of economic and service flows between cities and surrounding villages has paved the way for rural-urban linkages. These flows manifest in the form of remittances, employment of rural residents in cities, formal and informal credits, and government and private investments. These interactions have sustained a two-way relationship between cities and their rural peripheries in terms of economic performance and capital flow, ultimately enhancing the financial status of rural households and reducing their economic poverty.

Bahrami (2019) analyzed the physical-functional capacities of the city of Sanandaj with an emphasis on rural-urban linkages. His research showed that the economic factor had the highest linkage coefficient, while the physical factor had the least impact in connecting the city to its surrounding villages. The study also found that villages located closer to the city not only benefit from more favorable topography, facilitating rural-urban linkages, but also serve as focal points for the concentration of rural migrant populations.

Ahmadi et al. (2019) studied the effects of rural-urban linkages on physical-spatial transformations in peri-urban areas and concluded that all selected criteria in the target villages had undergone

changes, with the most significant transformations being in rural housing indices. The presence of public transportation stations and the creation of specific land uses to provide services to rural residents were the most important factors in forming these linkages.

Rokhsarzadeh et al. (2016) analyzed the factors influencing rural-urban linkages. Their results indicated that rural-urban linkages increased the movement of rural residents to urban centers, enhanced telephone communications, and improved mutual understanding between rural and urban residents in Astara. Economically, these linkages led to improved income, new job opportunities, and a boost in commercial and service activities, resulting in the formation of border markets. Additionally, factors such as trade and the participation of rural residents, especially women, in the urban economy contributed to the formation of rural-urban linkages, the creation of economic networks, and the growth of urban markets. This also led to increased rural tourism, greater interest in purchasing land, building second homes, and reverse migration in the rural areas of Astara.

In an international context, Ismagilov et al. (2020) conducted a study using literature review and developed a framework for interaction between cities and rural areas, examining security, privacy, and risks in smart cities. Their findings indicated that rural-urban linkages create significant political, technical, and socio-economic interdependencies for designers, integrators, and organizations involved in managing new smart cities. As observed in these studies, no research has yet been conducted specifically on the role of rural-urban linkages in the lifestyle of rural residents. Most studies have focused on the effects of these linkages on quality of life, regional development, poverty reduction, and physical and housing changes, which indirectly impact lifestyle.

Gebre and Gebremedhin (2019) studied the benefits of promoting rural-urban interdependence through ecosystem services. Their findings showed that rural and urban areas are economically, socially, and environmentally interconnected spaces, and rural-urban linkages, if locally managed, can influence the provision of rural ecosystem services and rural livelihoods.

Agergaard et al. (2019) reviewed rural-urban transformations and the development of small towns in sub-Saharan Africa. Their results indicated that small towns are best viewed as organic parts of the rural region in which they are located, with rural-urban synergy being an integral part of the dynamics of urbanization and rural development.

Akkoyunlu (2015) examined the potential and effects of rural-urban linkages for sustainable development. His findings showed that rural-urban linkages play a significant role in generating income, employment, and wealth. These linkages, through extensive commercial networks and the exchange of knowledge between urban and rural areas, lead to poverty reduction, rural empowerment, and economic development.

### *2.1. Theoretical Framework of the Research*

According to the literature, lifestyle encompasses a set of attitudes, values, behaviors, habits, and preferences in various aspects of life (Yazawa et al., 2014: 38). Lifestyle is a relatively coherent set of everyday behaviors and activities, involving specific habits and orientations (Giddens, 2002: 121). Through these behaviors, an individual is interpreted, and their personal identity is defined (Giddens, 2002: 143). In sociology, the concept of lifestyle is understood in two ways: first, lifestyle signifies wealth and social status and is often used as an indicator of social class. Second, lifestyle is viewed as a modern phenomenon that makes sense only within the context of modernity and the rise of consumer culture (Khajeh-Sarvi & Tabakhi-Mamaghani, 2013). The meaning and concept of lifestyle vary across regions, such as in taste, style, fashion, and lifestyle itself (Arjmand Siahpoush et al., 2014). Communities, based on their environmental conditions, have unique lifestyles that, until recently, evolved very slowly. However, since the advent of industrialization and modernity, lifestyle changes have accelerated due to technological advances and interactions with other regions (Bazrafshan & Toulabi-Nejad, 2017).

There are diverse perspectives on the concept of lifestyle, with each theorist focusing on particular aspects of individual and societal life. Max Weber and Pierre Bourdieu, as the leading theorists in this field, emphasize the role of social and class factors in shaping lifestyle. Weber sees lifestyle as a set of shared values and customs that emerge within social groups and give their members a collective identity. According to him, lifestyle is influenced by individuals' economic and social class positions,

and through behaviors and consumption patterns, social status is reinforced (Weber, 1978). Bourdieu argues that lifestyle is the result of cultural taste and social capital inherited from one's social class. In Bourdieu's view, lifestyle serves as a means of social distinction, with cultural differences and consumption choices contributing to the reproduction of social inequalities (Bourdieu, 1984).

Additionally, Anthony Giddens defines lifestyle as a set of reflective and conscious choices in modern societies. According to him, individuals in the modern world shape their lifestyle not only based on social conditions but also through conscious choices in areas such as food, clothing, and leisure. These choices, while appearing voluntary, are influenced by social and economic pressures, leading to the redefinition of personal identity (Giddens, 1991).

Moreover, Arlie Russell Hochschild, in her research, has focused on the role of emotions in lifestyle, showing that emotional labor in both work and family environments constitutes part of individuals' lifestyles. From her perspective, how emotions are managed and expressed in social and professional interactions significantly influences lifestyle (Hochschild, 1983).

On the other hand, Michel Foucault emphasizes power and social discourses as key determinants of lifestyle. In his view, lifestyle results from power relations and institutions such as the state, media, and education systems, which guide individuals to manage themselves within specific social frameworks (Foucault, 1978).

In the field of health, lifestyle is examined by Francesca Brivio and her colleagues in health psychology. They highlight the complexity of defining lifestyle and emphasize that a healthy lifestyle should combine both individual and social dimensions. This view stresses that lifestyle is shaped not only by individual behaviors but also by social factors (Brivio et al., 2023).

In more recent studies, Maurice and other researchers have emphasized social interactions and cultural networks as critical factors in shaping lifestyle. They view lifestyle as a social and cultural process that stems from individual and social interactions, defining personal identity in relation to society (Zhan, 2023).

In summary, the diverse perspectives on lifestyle demonstrate that this concept is influenced by individual choices as well as by social, economic, cultural, and even emotional structures. Therefore, lifestyle, as a complex and multifaceted factor, should be studied within broader frameworks that consider both the individual and the social relations and institutions that shape it. This theoretical diversity in lifestyle studies can enrich the theoretical framework of your research and reflect that lifestyle simultaneously mirrors personal identity and reproduces social structures.

This research focuses on Giddens' and Weber's theories to explore how rural-urban linkages impact the lifestyle of rural residents in the study area.

According to studies on rural-urban linkages, two main strategies for economic and social transformations and changes in rural lifestyle exist: the first is the modernization model, and the second is the local development and rural-urban linkages model (Van der Ploeg et al., 2000). In the modernization model, modernization refers to upgrading and following the lead of developed countries, which has various effects on human life. In this model, urban modernization leads to rural development and changes in rural life (Visser and Spoor, 2011). In contrast, rural-urban linkages are derived from the "local development model" (Efendiev & Sorokin, 2013). In local development, the reciprocal relationships between cities and villages lead to changes in rural life. According to this model, transformations in rural life are realized when mutual connections exist between rural and urban areas (Gebre & Gebremedhin, 2019). Rural-urban linkages bring about various economic, political, social, and cultural changes in rural communities, causing villages to move toward more advanced and complex patterns.

Rural-urban interdependence creates interconnected spaces economically, socially, and environmentally, and through mutual linkages, it affects rural life (Gebre & Gebremedhin, 2019). Rural-urban linkages in different regions can impact rural lifestyle by influencing assets, access to local markets, pricing policies, and access to food markets, as well as food consumption diversity (Sanaei Moghaddam et al., 2016). This process (rural-urban linkages) also brings changes in various structures such as occupational structures, rationality (Inglehart & Welzel, 2005), aesthetic preferences, and ideologies (Zokayi, 2007); changes in local communities' behavior and

attitudes (Nazoktabar et al., 2015); shifts in individualism and perspectives on economic progress and success, based on Inglehart's theory (Inglehart, 1997); changes in rural households' livelihoods (Goodwin Hawkins, 2014); and changes in rationality, leading to more efficient economies in rural communities (Inkeles, 1993). Rural-urban linkages also result in increased mobility between rural and urban areas, enhanced telephone communications, and improved mutual understanding between rural and urban residents. Economically, they lead to improved income levels, new job opportunities, the flourishing of commercial and service activities, the formation of markets, and greater participation of rural residents, including women, in the urban economy. This participation creates rural-urban linkages, establishes economic networks, stimulates urban markets, promotes rural tourism, increases interest in purchasing land, building second homes, and reverse migration in rural areas (Rokhsarzadeh et al., 2016). These changes vary according to social classes and the social spaces in which individuals live, affecting the economic, social, and cultural dimensions of rural households' lifestyles.

In this study, based on the research literature, three dimensions of lifestyle—cultural, economic, and social—are examined as the variables and dimensions of the research. Through spatial linkages between urban and rural areas, the effects and role of these spatial connections on the lifestyle of rural households are explored.

Based on the theoretical framework outlined, rural-urban linkages include the flow of information, goods, capital, and people. These linkages directly and indirectly impact the economic, social, and cultural aspects of rural life. The economic aspects of rural lifestyle, such as income generation, wealth accumulation, and materialism, change through rural-urban linkages and the flows they generate. The social and cultural aspects of rural lifestyle, which include factors like behavioral patterns, diet, clothing, cultural and linguistic patterns, place attachment, and consumerism, are influenced by the interactions between urban and rural settlements.

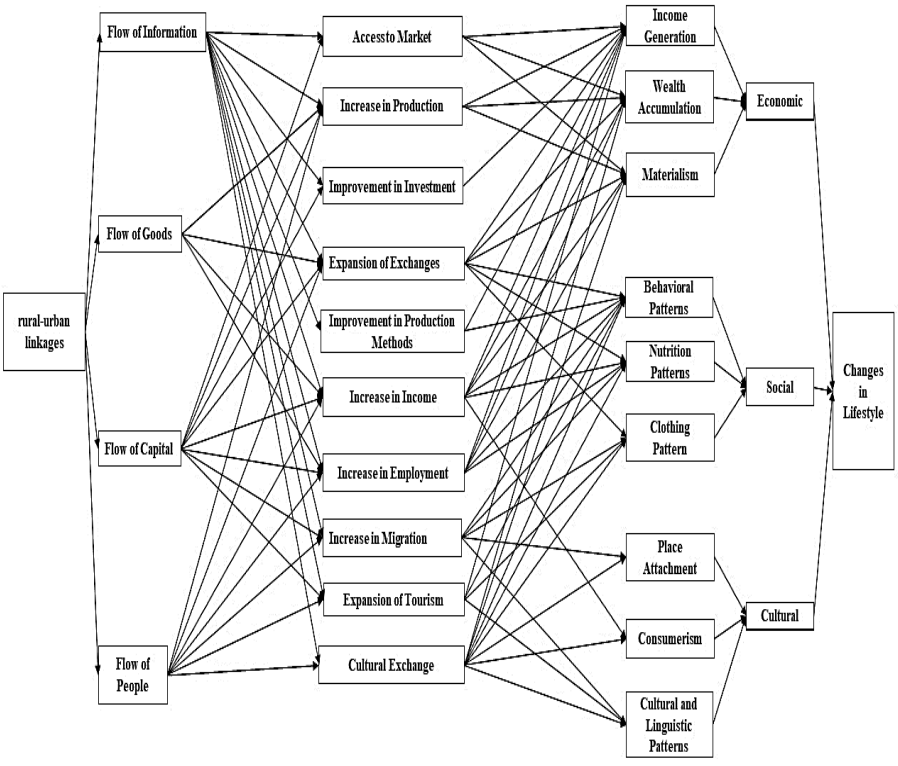


**Figure 1. Conceptual model of research**

## 3. Research Methodology

### *3.1 Geographical Scope of the Research*

The Lasht Nesha district is one of the districts of Rasht County, located in Gilan Province in northern Iran. The primary occupation of the people in this region is agriculture, with most of them engaged in rice cultivation. The district has 6,100 agricultural operators and 4,394 hectares of cultivated land. As of 2016, Lasht Nesha district had 46 inhabited villages with a population of approximately 32,000 people. The town of Lasht Nesha, the center of the district, had a population of 10,539. Additionally, the villages of the region maintain daily interactions with other towns in the area, including Kuchesfahan, Khomam, and the metropolitan city of Rasht.

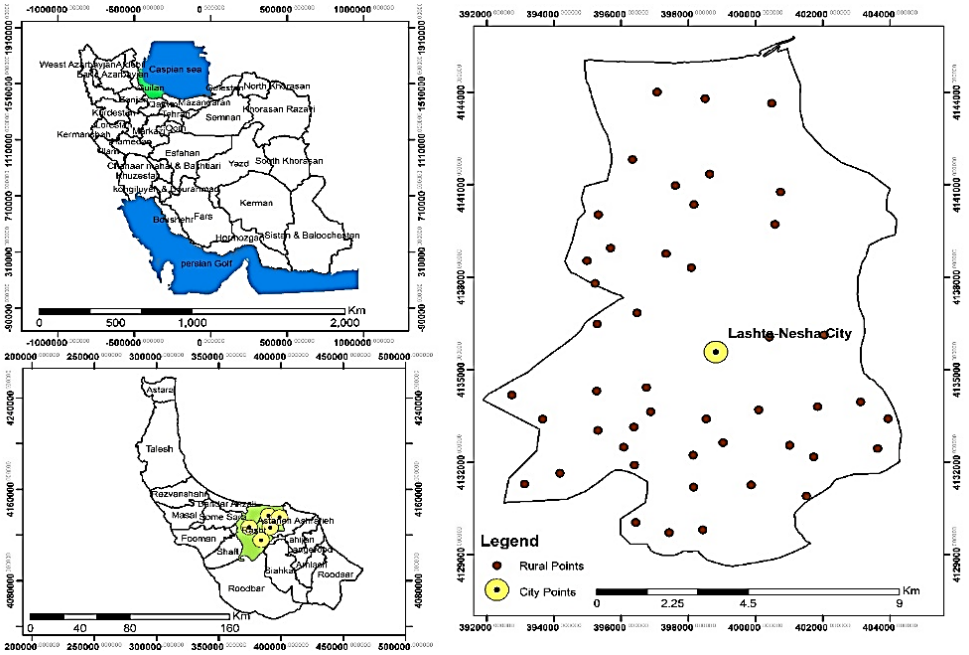


**Figure 2. Geographical location of Lasht Nesha**

### *3.2. Methodology*

The present research is classified as applied research and, in terms of "method," falls within the "descriptive-analytical" framework. Information was collected using both "documentary" and "field" methods. The statistical population includes rural households in the Lasht-e Nesha district. A sample of 360 respondents was selected using Cochran's formula and simple random sampling. The measurement tool in this research was a researcher-made questionnaire. After collecting and categorizing the data, SPSS software was used to analyze the data through descriptive and inferential statistics. For data analysis, linear regression fit tests and multivariate regression were employed. To assess reliability, a preliminary sample of 15 questionnaires was pre-tested, and the reliability coefficient was calculated using Cronbach's alpha method. The obtained alpha for different dimensions is presented in Table (1). Given that the overall value of 0.84 is higher than 0.70, it can be said that the scale has acceptable reliability. Additionally, the validity of the questionnaire was confirmed based on the judgment and opinion of experts in this field.

**Table 1. Calculated alpha for each lifestyle dimension**

| dimensions | Cronbach's alpha |
|---|---|
| social | 0.84 |
| economic | 0.89 |
| cultural | 0.79 |
| total amount | 0.84 |

Additionally, based on the research literature and past studies, the indicators and variables related to the topic of the role of urban-rural linkages in changing the lifestyle of rural households are extracted and presented in Table (2).

**Table 2. The indicators and variables related to the topic of the role of urban-rural linkages in changing the lifestyle of rural households**

| lifestyle dimensions | indicator | item |
|---|---|---|
| social | behavioral changes | Level of interest in living in the city, Level of village-city interaction, Level of decrease in family interactions, Interest in engaging in individual activities, Increase in personal profit versus collective profit, Level of trust and cohesion with village residents, Level of families' inclination towards urban lifestyle, Ethnic and religious interaction |
| | nutrition patterns | The interest in using ready-made food, the interest in using restaurant food, the amount of use of snacks (chips, puffs, etc.), the amount of cooking food in traditional ways. |
| | changes in clothing | The decrease in the use of local clothes, the trend towards clothes with foreign designs, the increase in the use of cosmetics and hygiene products, the level of unwillingness to use local and local models and clothing, |
| economic | income generation | The degree of tendency towards income-generating activities, the degree of effort to have more jobs, the monetary view of work and activities, the degree of achievement of profit motivation in works and activities. |
| | wealth accumulation | Attempting to acquire wealth in any way (even unorthodox ways), accumulation of wealth, level of contentment with reasonable level of wealth, level of sensitivity towards financial relationships, level of savings |
| | materialism | Luxury in life, the tendency to own a house and own vehicles, the degree of dependence on material things in life, the degree of tendency to unnecessary devices, considering money as superior in everything. |
| cultural | place attachment | Decrease in the level of attachment to the place, the level of satisfaction with commuting in the place, the level of feeling comfortable in one's village compared to other places, preferring to live in the village instead of the city, staying in the village where one lives, satisfaction and desire to live in the village. |
| | consumerism | Increasing diversity in food consumption, the amount of food and store use at home, low tendency to use food raw materials, increasing the amount of use of luxury and luxury items, |
| | cultural and linguistic changes | Decrease in the interest in using the local language, the interest in using Persian in conversation, the interest in learning English among the village youth, the use of new words and terms instead of local expressions, not teaching the mother tongue to children. |

Source: Rokhsarzadeh et al., 2015; Bazarafshan and Toulabi-Najad, 2017; Bahrami, 2019; Ismailov et al.,

## 4. Research Findings

The examination of the descriptive findings of the research and the distribution of the questionnaire among the sample respondents indicated that the majority of respondents were aged between 30 and 40 years. In terms of education, most respondents had an education level of middle school or higher. Regarding employment, 52.7% of the sample population were farmers or involved in agricultural activities. In terms of gender, the descriptive findings showed that 83.03% of the respondents were male. Regarding marital status, 88.8% of the respondents were married. Complete information on the descriptive findings related to the respondents is presented in Table 3.

**Table 3. Description of the Frequency of the Study Population**

| variable | most responsive | number of respondents | percent |
|---|---|---|---|
| age | 30 to 40 years | 202 | 57.2 |
| education | middle school and above | 159 | 44.1 |
| gender | man | 299 | 83.03 |
| marital status | married | 320 | 88.8 |
| main job | agriculture | 190 | 52.7 |

### *4.1. The role of rural-urban linkages on changing the lifestyle of rural households*

As mentioned in the research methodology, to answer the first research question regarding the linear relationship between rural-urban linkages in Rasht County and changes in the lifestyle of rural residents, regression fitting and Fisher's statistic were used. Accordingly, the coefficient of determination is 0.987, indicating that the independent variable (rural-urban linkages) explains 98 units of the changes in the dependent variable (lifestyle of rural residents). Additionally, the significance level is smaller than 0.000, so the null hypothesis of the regression model's insignificance is rejected with 99% confidence. Therefore, the regression model is statistically significant, indicating a highly significant coherence between the variable of rural-urban linkages and the lifestyle of rural households in Rasht County. Thus, rural-urban linkages have caused changes in the lifestyle of rural households in the studied area. Tables (4) and (5) show this. Therefore, based on the findings of this part of the research, it can be said that there is a significant linear relationship between rural-urban linkages in Rasht County and changes in the lifestyle of rural residents in this region. Thus, the first research question is answered.

**Table 4. Variance analysis of factors influencing the lifestyle of villagers**

| **standard error** | **corrected coefficient of determination** | **coefficient of determination** | **multiple correlation coefficient** |
|---|---|---|---|
| 0.015 | 0.742 | 0.987 | 0.821 |

**Table 5. Analysis of variance based on the presence of linear relationship between variables**

| components | sum of squares | degrees of freedom | mean Squares | F | significance level |
|---|---|---|---|---|---|
| Regression effect | 8.232 | 4 | 3.892 | 46.561 | 0.00 |
| Residual | 2.512 | 99 | 0.001 | | |
| Total | 12.346 | 359 | | | |

To answer the second research question and examine the effects of rural-urban linkages on changing the lifestyle of rural residents, as well as to assess the important influencing dimensions and indicators, multivariate regression was used.

The findings indicate that for all variables (except for place attachment), the significance level is 0.000. The ßETA values show that among the social indicators of lifestyle changes for rural residents in Rasht County, rural-urban linkages have had the greatest impact on changes in clothing with a beta coefficient of 0.386. In the next order, rural-urban linkages and the high interaction of rural residents with the city have influenced behavioral changes with a beta coefficient of 0.371 and nutrition patterns with a beta coefficient of 0.328. As a result, rural households in the studied area have changed their behavioral patterns, nutrition patterns, and clothing patterns by following urban trends.

Examining the impacts of rural-urban linkages on the economic lifestyle changes of rural households in Rasht County shows that these linkages and close interactions between the city and village have influenced materialism with a beta coefficient of 0.315. Rural households have thus oriented their economic behavior towards materialism. Among the economic variables, village-city relationships have respectively influenced wealth accumulation with a beta coefficient of 0.263 and income generation with a beta coefficient of 0.152. These coefficients indicate that village-city interactions also impact the economic lifestyle patterns of rural residents.

Finally, the findings, according to the ßETA values, indicate that among the cultural indicators of lifestyle changes for rural residents in Rasht County, rural-urban linkages have had the most significant impact on consumerism with a beta coefficient of 0.442. This indicates that

consumerism and the tendency towards consumerism have increased among rural households in the studied area. In the next order, cultural and linguistic changes have a beta coefficient of 0.298. Among the cultural lifestyle variables, rural-urban linkages have had the least impact on place attachment with a beta coefficient of 0.058. Rural households believe that their relationship with the city and urban interactions have had a minimal impact on their place attachment. Table (6) presents the impact coefficients of rural-urban linkages on the lifestyle variables of rural residents across three dimensions.

Final examinations of rural-urban linkages and their impact on lifestyle changes of rural households in Rasht County showed that rural-urban linkages have had the most significant impact on changes in clothing and behavioral changes among social lifestyle indicators, on materialism and wealth accumulation among economic lifestyle indicators, and on consumerism and cultural and linguistic changes among cultural lifestyle indicators.

**Table 6. The effect coefficients of rural-urban links on the lifestyle variables of villagers**

| lifestyle dimensions | indicator | standardized coefficient | unstandardized coefficient | | T | significance level |
|---|---|---|---|---|---|---|
| | | BETA | standard error | B | | |
| | intercept | - | 0.025 | 0.045 | 1.843 | 0.00 |
| social | behavioral changes | 0.371 | 0.007 | 0.270 | 4.942 | 0.00 |
| | nutrition patterns | 0.328 | 0.007 | 0.249 | 3.561 | 0.00 |
| | changes in clothing | 0.386 | 0.008 | 0.345 | 4.047 | 0.00 |
| economic | income generation | 0.152 | 0.015 | 0.247 | 7.88 | 0.00 |
| | wealth accumulation | 0.263 | 0.004 | 0.123 | 3.653 | 0.00 |
| | materialism | 0.315 | 0.013 | 0.101 | 9.12 | 0.00 |
| cultural | place attachment | 0.058 | 0.031 | 0.034 | 1.100 | 0.076 |
| | consumerism | 0.442 | 0.017 | 0.182 | 11.24 | 0.00 |
| | cultural and linguistic changes | 0.298 | 0.012 | 0.150 | 11.39 | 0.00 |

In Table (7), the impact coefficients of rural-urban linkages on the overall dimensions of the lifestyle of rural residents in Rasht County have been examined. The findings, based on the ßETA values, indicate that among the three dimensions of social, economic, and cultural lifestyle of rural residents in Rasht County, rural-urban linkages have the greatest impact on the social dimension of the lifestyle of rural residents, with an impact coefficient of 0.361. These connections have led to behavioral changes, nutrition patterns, and changes in clothing for rural households in the rural areas of Rasht County. The next most significant impact of lifestyle changes pertains to the cultural dimension, with an impact coefficient of 0.266. Rural-urban linkages have caused cultural lifestyle changes in rural households in the region through decreased place attachment, consumerism, and cultural and linguistic changes. Finally, the impact of rural-urban linkages has the least effect on the economic dimension. Nevertheless, the analyses showed that rural-urban linkages have altered the economic lifestyle of rural households in the study area through income generation, wealth accumulation, and materialism.

Based on these interpretations and findings, it can be said that the major impacts of rural-urban linkages on changing the lifestyle of rural residents are, in order, related to the social (0.361), cultural (0.266), and economic (0.152) dimensions. Each of these dimensions is manifested through indicators such as behavioral changes, nutrition patterns, changes in clothing, income generation, wealth accumulation, materialism, place attachment, consumerism, and cultural and linguistic changes. Thus, the second research question has also been answered.

**Table 7. Impact Coefficients of Rural-Urban Linkages on the Dimensions of Rural Residents' Lifestyle**

| dimensions | standardized coefficient | unstandardized coefficient | | T | significance level |
|---|---|---|---|---|---|
| | BETA | standard error | B | | |

| | | | | | |
|---|---|---|---|---|---|
| intercept | - | 0.011 | 0.052 | 1.745 | 0.00 |
| social lifestyle | 0.361 | 0.008 | 0.263 | 4.889 | 0.00 |
| economic lifestyle | 0.243 | 0.005 | 0.112 | 3.456 | 0.00 |
| cultural lifestyle | 0.266 | 0.006 | 0.251 | 3.621 | 0.00 |

## 5. Discussion and Conclusion

This study examined the impact of rural-urban linkages on the changes in the lifestyle of rural households in the Lasht Nesha district of Rasht County. The results indicated that these linkages have significant effects on three dimensions: social, economic, and cultural, as outlined below:

In the social dimension, rural-urban linkages have led to changes in behavior, dietary patterns, and clothing among rural households. These changes suggest that continuous interactions with urban areas have driven rural residents to adopt urban lifestyle patterns. For example, increased consumption of fast food and restaurant meals, a decline in the use of traditional clothing, and an increased use of cosmetic and hygiene products demonstrate the direct impact of these linkages on the social lifestyle of rural residents.

Overall, it can be said that rural-urban linkages have significant effects on lifestyle patterns, norms, and social behaviors in rural communities, including:

- Changes in behaviors and norms: The introduction of urban lifestyles to rural areas may lead to the gradual adoption of new social norms, including new consumption behaviors, social relations, and even daily lifestyle choices. For example, traditional dietary preferences may shift toward more processed and faster food options.
- Erosion of cultural identity: Increased interactions with urban areas may lead to the erosion of cultural identity and traditional norms. Rural residents may distance themselves from local customs to conform to new social standards.
- Increased social inequalities: These changes may exacerbate social inequalities, as some individuals may be more capable of adapting to these changes, potentially widening social and economic disparities within the community.

Rural-urban linkages have also had significant cultural impacts on rural residents. Increased consumerism, linguistic changes, and a reduction in place attachment are among the major cultural changes observed in this study. These changes indicate that rural residents have been influenced by urban culture, leading to shifts in their cultural and linguistic patterns.

In summary, rural-urban linkages have profound effects on the identity, customs, and social attitudes of rural communities, which can be summarized as follows:

- Changes in cultural identity: Connections with urban areas can lead to shifts in the cultural identity of rural residents, as they may gradually adopt new cultural habits and behaviors that may conflict with local traditions.
- Cultural diversity: The introduction of new cultural elements to rural communities may increase cultural diversity, but it can also weaken local cultures. This diversity can be seen as both an opportunity and a challenge.
- Decline in the use of local languages: As cultural and social norms change, the use of local languages and dialects may decline, which could lead to the erosion and eventual disappearance of local cultures.

It should be noted that the above-mentioned socio-cultural findings are largely explainable through the theories of Weber and Giddens.

In the economic dimension, rural-urban linkages have resulted in increased income generation, wealth accumulation, and materialism among rural households. These changes reflect improved economic opportunities due to better access to markets and increased investment. Notably, the pursuit of wealth and the desire for homeownership and vehicle ownership are key indicators of these economic changes.

In general, rural-urban linkages have had significant effects on livelihoods and economic opportunities in rural communities, with the most important effects being:

- Access to markets: Better connections with cities can enable rural households to access new markets and increase their incomes. This helps residents participate in new economic activities such as entrepreneurship and small businesses.
- Changes in consumption patterns: With increased income and access to urban products, rural households may shift towards consuming

luxury goods and more modern services, which can lead to increased demand in local markets.
- Improvement of infrastructure: Urban linkages can contribute to the improvement of rural infrastructure, including transportation, electricity, and water supply, which in turn can enhance living conditions and economic activities.

Overall, the research findings indicate that rural-urban linkages have had extensive impacts on the lifestyle changes of rural households in the Lasht Nesha district of Rasht County. Contrary to the findings of Yousefnia & Haghighatian's 2016 study in Zanjan, which identified economic, cultural, and social factors as having the greatest impact, the present study found that in the study area, the greatest impact of rural-urban linkages was on cultural, social, and economic dimensions, respectively. In particular, in the cultural dimension, consumerism and cultural and linguistic changes were most significant, followed by changes in clothing and behavior in the social dimension, and materialism, wealth accumulation, and income generation in the economic dimension. Recommendations: To expand interactions between urban and rural areas and preserve rural lifestyles, the following actions are recommended:

- Developing communication and information infrastructure to provide better access to information and markets, thereby improving the economic and social conditions of rural residents.
- Promoting experiential tourism in rural areas to create tourism opportunities, improve the economic conditions of rural residents, and at the same time preserve local culture and traditions.
- Preserving and strengthening local culture through promoting the use of local language and culture, organizing local festivals such as bullfighting or "Vazajang" and other local games.

**Acknowledgments**
This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

**Authors′ contributions**
The authors equally contributed to the preparation of this article.

**Conflict of interest**
The authors declare no conflict of interest.

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*Journal of Research and Rural Planning*
Volume 13, No. 4, Autumn 2024, Serial No. 47, Pp. 65-80
**eISSN: 2783-2007** **ISSN: 2783-2791**
http://jrrp.um.ac.ir

**Original Article**

# تبیین اثرات پیوندهای روستایی-شهری بر تغییر سبک زندگی روستایی (مطالعه موردی: بخش لشت نشا، گیلان، ایران)

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## چکیده مبسوط

### ۱. مقدمه

در چند دهه اخیر، سبک زندگی خانوارهای روستایی با تغییرات گسترده‌ای مواجه شده است که یکی از عوامل تأثیرگذار اصلی بر این تغییرات، پیوندهای شهری-روستایی است. این پیوندها، با ایجاد جریان‌های اقتصادی، فرهنگی و اجتماعی میان مناطق شهری و روستایی، مرزهای سنتی زندگی را کاهش داده و موجب شکل‌گیری الگوهای زندگی جدید در مناطق روستایی شده‌اند. منطقه لشت‌نشا در شهرستان رشت نیز یکی از مناطق روستایی است که به دلیل موقعیت جغرافیایی خود در نزدیکی مناطق شهری، به شدت تحت تأثیر این پیوندها قرار گرفته است. از آنجا که بررسی تأثیرات این پیوندها بر ابعاد مختلف زندگی روستایی از اهمیت ویژه‌ای برخوردار است، پژوهش حاضر با هدف تحلیل این تأثیرات و به‌ویژه تغییرات ناشی از پیوندهای شهری-روستایی در سبک زندگی خانوارهای روستایی لشت‌نشا انجام شده است. این مقاله به دنبال پاسخ به این سؤال است که چگونه و به چه میزانی پیوندهای شهری-روستایی بر ابعاد مختلف زندگی روستاییان تأثیرگذار بوده و چه تغییراتی را در ساختار زندگی آن‌ها به وجود آورده است.

### ۲. مبانی نظری تحقیق

چارچوب نظری این پژوهش بر مبنای نظریات ماکس وبر و پیر بوردیو در زمینه سبک زندگی و تأثیرات عوامل خارجی بر آن استوار است. طبق نظریه بوردیو، سبک زندگی، نمادی از سرمایه فرهنگی و اجتماعی افراد است که بیانگر تفاوت‌های طبقاتی و اجتماعی نیز می‌باشد. سبک زندگی از ترکیب عواملی چون ارزش‌ها، عادات مصرفی و شیوه‌های رفتاری شکل می‌گیرد که همواره تحت تأثیر شرایط اقتصادی و اجتماعی موجود قرار دارد. در این پژوهش، پیوندهای شهری-روستایی به عنوان عاملی برای ورود عناصر شهری به مناطق روستایی و تغییر در الگوهای رفتاری، مصرفی و اجتماعی خانوارهای روستایی در نظر گرفته شده است. از سوی دیگر، نظریه توسعه پایدار به عنوان یکی از مبانی اصلی تحلیل این تأثیرات استفاده شده و بر لزوم ایجاد توازن میان توسعه شهری و حفظ ساختارهای فرهنگی و اجتماعی روستا تأکید دارد. این چارچوب نظری به تحلیل دقیق‌تر تغییرات سبک زندگی و تأثیرات پیوندهای شهری-روستایی در این زمینه کمک می‌کند و دیدگاهی جامع درباره ارتباط میان این پیوندها و ساختارهای زندگی روستایی ارائه می‌دهد.

### ۳. روش تحقیق

پژوهش حاضر یک مطالعه کاربردی است که از روش توصیفی-تحلیلی برای تجزیه و تحلیل داده‌ها استفاده می‌کند. داده‌های مورد نیاز این پژوهش از دو طریق مطالعات اسنادی و روش‌های میدانی گردآوری شده‌اند. جامعه آماری پژوهش، خانوارهای روستایی ساکن در بخش لشت‌نشا از توابع شهرستان رشت است. با توجه به تعداد خانوارها، نمونه‌ای به حجم ۳۶۰ خانوار با استفاده از فرمول کوکران و روش نمونه‌گیری تصادفی ساده انتخاب شد. ابزار گردآوری داده‌ها در این پژوهش پرسشنامه بوده که از نظر روایی و پایایی مورد ارزیابی قرار گرفت. ضریب آلفای کرونباخ برای تمامی ابعاد تحقیق بالای ۰.۷۰ به دست آمد، که نشان‌دهنده پایایی قابل قبول ابزار است. برای تحلیل داده‌ها، از نرم‌افزار SPSS و آزمون‌های آماری مختلف از جمله رگرسیون خطی و چندمتغیره استفاده شد. این روش‌ها امکان سنجش و تحلیل دقیق تأثیرات پیوندهای شهری-روستایی بر ابعاد مختلف زندگی خانوارهای روستایی را فراهم می‌کنند و امکان بررسی میزان تأثیرگذاری متغیرهای گوناگون را می‌دهند.

### ۴. یافته های تحقیق

یافته‌های پژوهش نشان می‌دهد که پیوندهای شهری-روستایی تأثیرات چشمگیری بر سبک زندگی خانوارهای روستایی داشته‌اند. در بعد اجتماعی، تغییرات قابل توجهی در رفتارهای روزمره، الگوهای تغذیه و پوشاک خانوارها مشاهده شد. به عنوان مثال، گرایش به مصرف غذاهای آماده، استفاده از لباس‌های مد روز و تغییر الگوهای

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رفتاری نشان می‌دهد که فرهنگ مصرفی شهری به تدریج جایگزین سنت‌های روستایی می‌شود. در بعد اجتماعی، علاوه بر تأثیرات مثبت، کاهش انسجام اجتماعی، افزایش فردگرایی و کاهش تعاملات بین‌فردی نیز از جمله تغییرات قابل توجه ناشی از این پیوندهاست که بر ساختارهای اجتماعی روستا تأثیر منفی گذاشته است. در بعد اقتصادی، پیوندهای شهری-روستایی منجر به ایجاد تغییرات مهمی در نگرش‌ها و رفتارهای اقتصادی روستاییان شده‌اند. از جمله این تغییرات می‌توان به افزایش تمایل به مادی‌گرایی، ثروت‌اندوزی و تمایل به کسب درآمد بیشتر اشاره کرد. همچنین، روستاییان با استفاده از فرصت‌های شغلی بیشتر در مناطق شهری و دسترسی به بازارهای شهری، درآمد خود را افزایش داده و تمایل بیشتری به مالکیت دارایی‌های شهری نظیر خانه و خودرو پیدا کرده‌اند. در بعد فرهنگی نیز تغییرات قابل توجهی مشاهده می‌شود. به عنوان مثال، استفاده کمتر از زبان محلی و تغییر در فرهنگ گفتاری و رفتاری به سمت الگوهای شهری، کاهش تعلق مکانی و افزایش مصرف‌گرایی از جمله نشانه‌های بارز تغییرات فرهنگی است که تحت تأثیر پیوندهای شهری-روستایی در منطقه لشت‌نشا به وجود آمده است.

## ۵. بحث و نتیجه‌گیری

پژوهش حاضر نشان می‌دهد که پیوندهای شهری-روستایی به میزان قابل توجهی سبک زندگی خانوارهای روستایی را در بخش لشت‌نشا تغییر داده‌اند و اثرات چشمگیری بر ابعاد مختلف زندگی آن‌ها داشته‌اند. بیشترین تأثیر این پیوندها در بعد فرهنگی مشاهده شده که شامل تغییراتی همچون کاهش تعلق مکانی، گرایش به مصرف‌گرایی و کاهش استفاده از زبان و فرهنگ محلی است. تأثیرات اجتماعی نیز شامل تغییر در الگوهای رفتاری روزانه، مصرفی و نوع پوشاک روستاییان است که نشان‌دهنده گرایش به سبک زندگی شهری است. همچنین، پیوندهای شهری-روستایی منجر به تغییرات اقتصادی نظیر افزایش تمایل به مادی‌گرایی و گرایش به درآمدزایی بیشتر شده‌اند. این تغییرات نشان‌دهنده دگرگونی عمیق در سبک زندگی روستایی است که ساختار سنتی زندگی روستایی را دستخوش تغییر کرده و فضای روستا را به سمت زندگی پیچیده‌تر و مدرن‌تر سوق داده است. بر اساس این یافته‌ها، پیشنهاد می‌شود که برنامه‌ریزان و سیاست‌گذاران با توسعه زیرساخت‌های ارتباطی و حفظ فرهنگ و سنن محلی، از تأثیرات منفی این پیوندها کاسته و از فرصت‌های به وجود آمده برای ارتقای کیفیت زندگی روستاییان بهره‌برداری کنند.

**کلیدواژه‌ها:** پیوند شهری-روستایی، سبک زندگی، توسعه روستایی، لشت‌نشا، تغییرات فرهنگی، مادی‌گرایی، تعلق مکان.

## تشکر و قدرانی

پژوهش حاضر حامی مالی نداشته و حاصل فعالیت علمی نویسندگان است.

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**How to cite this article:**
Asheri-Gafsheh, E., & Yasouri, M. (2024). Explaining the effects of rural - urban linkages on changing the rural lifestyle (Case study: Lasht-e Nesha District, Guilan, Iran). *Journal of Research & Rural Planning, 1*3(4), 65-80.
http://dx.doi.org/10.22067/jrrp.v13i4.2408-1106

**Date:**
*Received: 14-11-2024*
*Revised: 16-01-2025*
*Accepted: 11-03- 2025*
*Available Online: 11-03-2025*

*Journal of Research and Rural Planning*
Volume 13, No. 4, Autumn 2024, Serial No. 47, Pp. 81-96
**eISSN: 2783-2007** **ISSN: 2783-2791**
http://jrrp.um.ac.ir
**Original Article**

# Investigating the Impact of Socio-cultural Resilience Dimensions of Coastal Regions on Sustainable Tourism Development (Case Study: Coastal Regions of Bushehr)

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## Abstract

**Purpose**- Coastal regions are some of the most popular tourism destinations worldwide and tourism can be a promising tool for enhancing dimensions of social-cultural resilience. The more resilient a community is to sudden, unexpected, or chronic economic, political, social, and environmental (negative) events, the less vulnerable it is to these disruptions. This study aimed to investigate the impact of socio-cultural resilience dimensions of coastal regions on sustainable tourism development in coastal regions of Bushehr, Iran.

**Design/methodology/approach**- This study is applied in terms of its objective and is correlational-descriptive in nature. Based on the type of data collected and analyzed, it is a quantitative study. The target population comprised 1686 socio-cultural experts involved in tourism development in Bushehr City. A sample of 313 participants was selected using random sampling, based on Cochran's formula. The study utilized two questionnaires: a Sustainable Tourism Development questionnaire and a Socio-Cultural Resilience questionnaire. Smart Plus and SPSS software version 26, and parametric, and nonparametric statistical tests were used to analyze the findings.

**Findings-** The results showed a significant positive relationship between socio-cultural resilience in coastal regions and the level of tourism development in Bushehr Province. The regression coefficient for the impact of sociocultural resilience on tourism development as a dependent variable was 0.767. The regression coefficients for the cultural, environmental, economic, and social dimensions were 0.713, 0.839, 0.773, and 0.611, respectively. The coefficient of determination ($R^2$) for sustainable tourism development was 0.589, indicating that 58.9% of the variance in sustainable tourism development in coastal areas can be explained by sociocultural resilience. The $R^2$ values for the cultural, environmental, economic and social dimensions were 0.508 (50.8%), 0.703 (70.3%), 0.597 (59.7%) and 0.373 (37.3%), respectively.

**Practical implications**- The results of this study have significant implications for the development of public policies related to sustainable tourism. In conclusion, given the diverse tourism opportunities and potentials of Bushehr Province in coastal areas, especially in the field of water and coastal sports, tourism managers and planners as well as researchers and scientists must show the necessary commitment to the formation and development of this industry through proper planning and determining appropriate strategies. It concludes by presenting some policy-making guidelines for a tourism destination manager.

**Keywords-** Tourism, Social resilience, Cultural resilience, Sustainable development.

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**How to cite this article:**
Mohebizadeh, I., Jafarinia, Gh., & Pasallarzadeh, H. (2024). Investigating the impact of socio-cultural resilience dimensions of coastal regions on sustainable tourism development (Case study: Coastal regions of Bushehr). *Journal of Research & Rural Planning, 13*(4), 81-96.
http://dx.doi.org/10.22067/jrrp.v13i4.2410-1112

**Date:**
*Received: 24-02-2025*
*Revised: 31-03-2025*
*Accepted: 07-04- 2025*
*Available Online: 07-04-2025*

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## 1. Introduction

Today's world is characterized by rapid socio-economic changes and frequent natural hazards (Clar et al., 2021). Consequently, in the current century we are witnessing natural and sometimes man-made events that result in major crises and catastrophes in societies unprepared for their impacts. Recent disasters have shown that communities and individuals have become increasingly vulnerable and risks have escalated. However, risk reduction and vulnerability reduction are often overlooked until disasters occur (Pashnezhad Sielab et al., 2017). Furthermore, due to the complexity of urban environments, the global perspective of urban management has shifted towards improving resilience in response to risks and changes (Kapucu et al., 2024). In modern times, the concept of resilience has entered planning with different orientations (social, economic, spatial, managerial, etc.), although the focus remains on environmental issues. The main goal of resilience systems is to achieve peak performance even under pressure and stress (Barghi et al., 2017). A resilient city can continue to thrive and maintain its quality of life even during severe natural disasters without the need for significant external assistance. A resilient city is characterized by a stable network of physical systems and human communities (Eghbali et al., 2021). However, resilience is a multifaceted approach and discussions around this approach require consideration of various dimensions and influencing factors. According to Lv et al. (2024), the main dimensions that influence vulnerability and resilience include physical, social, political, economic, organizational and environmental components. The social dimension, a central aspect of resilience, reflects the ability of a resilient community to respond positively to changes and stressors arising from differences in social performance between communities. Furthermore, a resilient community can maintain its core functions despite existing tensions (Lv et al., 2024).

Overall, social resilience is part of the broader dimensions of resilience, and the social resilience approach addresses the sociological aspects of resilience in cities and provides a method for understanding dynamic systems interconnected through interactions between people and their environment (Ahmadivostakolaei et al., 2024). Urban systems and their communities must be able to withstand stresses, events and disasters. Even after a crisis, they should be able to return to their original state in a relatively short period of time. Therefore, resilience theory is crucial for understanding the ability of communities to sustainably develop the tourism industry (Holladay & Powell, 2016). From this perspective, it is important to recognize that cities are primary tourist destinations and tourism has become one of the driving forces for urban development and revitalization. Consequently, tourist cities are often viewed as unique and subject to external disturbances due to the dominant role of tourism in their development (Morrison & Maxim, 2021). It is important to note that the concepts of resilience and sustainable development should not be viewed as synonyms. In terms of resilience, sustainability includes creating, testing, and maintaining adaptability as well as developing processes to sustain opportunities (Holladay & Powell, 2013). Redman claims that resilience highlights the quality of the system, while sustainable development focuses on the conditions; Thus, the resilience of a system or community becomes one of its overall sustainability components (Redman, 2014). Assessing tourism development based on the social resilience of tourist destinations can be considered as a key requirement for sustainable destination management. Such assessments require identifying the impact of social resilience components on sustainable tourism development (Holladay, 2018).

The city of Bushehr, as one of the southern Iran's major tourist destinations, has gained significant importance due to its unique coastal and tourism-oriented location. In recent years, the impact of this positioning has progressively increased, to the extent that the city's physical development in recent years has largely been driven by its tourism role and function. This has led to the expansion of numerous townships and human settlements within the city. Given the city's abundant tourism attractions and recent investments, there is a pressing need to move towards sustainable tourism development. However, due to the environmental hazards arising from tourism development, it is crucial to focus on enhancing social resilience in the city. Leveraging the benefits of social resilience is essential for stabilizing the sustainable development of tourism in the city of Bushehr. In line with this necessity, This study aims

to examine the social and cultural resilience concerning tourism development in the coastal areas of Bushehr Province. The objective is to evaluate the sustainability of tourism development in the social and cultural contexts of growth within the host communities of Bushehr's coastal regions.

## 2. Research Theoretical Literature

Nowadays, tourism development has attracted great attention in various countries from economic, sociocultural and political perspectives (Movahedi & Amiri, 2023). Sustainable development is the ideal goal for the tourism industry and many other industries in the 21st century. This approach focuses on preserving environmental integrity and diversity, meeting basic human needs, conserving resources for future generations and reducing inequality (Streimikiene et al., 2021). Therefore, it emphasizes a long-term perspective and a balance between the individuals of the current generation and between humans and other organisms. If sustainable development is one of the main goals of this era in the tourism industry, then measuring the performance and impact of its economic, socio-cultural and environmental aspects in tourism destinations is crucial (Baloch et al., 2023).

With the rise of tourism and global economic change, tourism and urban development have become intertwined (Dai et al., 2019). Tourism is a complex economic activity that has infiltrated all aspects of human life. This industry is the fastest growing industry in the world with many economic, social and environmental benefits (Moridsadat et al., 2021).

For effective planning, it is crucial to understand how tourism works from a social, economic, institutional and environmental perspective. Man-made crises (Holladay & Powell, 2013) and natural disasters (Kim & Marcouiller, 2015) can impact tourism destinations in unforeseen ways, from local to global levels. Unexpected shocks can destabilize any type of system, from economic to political to tourism. Efforts are underway to understand, maintain, and improve the resilience of these systems to mitigate the acute and chronic changes that may impact these systems. Managing systems – such as a tourism system – for shocks is called resilience thinking. Resilience thinking includes system qualities such as persistence, adaptability and changeability, i.e. h. the dynamics that increase the ability of a system to remain relatively stable or within critical thresholds (Folke et al., 2010). Resilience is the ability of a system to absorb disturbances and learn and adapt during turbulent times to grow and become more dynamic (Holling, 1973). Sustainability is generally defined as the ability of a system to be adaptable and support opportunity and innovation (Holling & Gunderson, 2002). The combination of adaptability and innovation increases a system's overall ability to absorb internal (e.g., social inequality, political unrest) and external (e.g., global economic changes, hurricanes) shocks. In this original ecological meaning, resilience focuses on the persistence of populations or communities at the ecosystem level and refers to both the total area and the elevation of the lowest point of a population's area of attraction (Hahn & Nykvist, 2017).

This problem has been known in our country for a long time. Conversely, there are perspectives that suggest barriers to tourism development due to the country's socio-cultural and political conditions (Dias et al., 2024). Therefore, tourism is culturally significant. In the short term, it promotes greater unity and connection between ethnicities, religions and different cultures. As a result, the importance of the "cultural element" in this industry is increasing day by day. Tourism increases communities' awareness of each other's way of life, brings cultures closer together, and thus enables a faster growth of cultural and social tourism, which is most closely linked to the cultural element, than the overall growth of tourism worldwide (Alamineh et al., 2023).

The growth of tourism activities in coastal regions in recent decades has had a profound impact on the economic, social and environmental foundations, posing serious challenges to the development processes in these regions. In addition to the primarily economic benefits, the growth of tourism activities in these regions also imposes a number of social, environmental and cultural costs. Studies show that the trend of developing tourist activities in coastal regions has led to a deterioration of tourism resources and negative impacts on the physical, social and cultural dimensions of host communities, moving away from the principles of sustainable tourism development (Krittayaruangroj et al., 2023). In other words, due to the lack of strategic planning and specific models and strategies, the trend of scattered development has led to an unregulated form in the region, resulting in inappropriate and scattered land use changes and the degradation of local landscapes. The role of tourism is changing from a driving force to a destructive factor in the urban development process (Kim & Kang, 2020; Nuissl &

Siedentop, 2021). This situation contradicts the principles of sustainable tourism development and serves as evidence of the unsustainability of development in the studied area, indicating an undesirable development trend and a decline in destination quality, as well as a decline in future markets. Therefore, it is important to identify existing capabilities and limitations in order to develop models and strategies that maximize benefits while ensuring their sustainability in various aspects (Haghlesan & Arbabi Bostan Abad, 2023).

Zalaghi et al. (2022) showed in their study entitled "Proposing a Structural Equation Model for the Feasibility of Rural Tourism Development (Case Study: Gaikan Village in Aligudarz County)" that the main attractions and tourism opportunities of Gaikan Village are divided into four main categories: cultural and religious attractions, use of organic products, rural welfare facilities and services and natural attractions. In addition, the main limitations and obstacles to the development of tourism in this village are: lack of adequate investments, avoidance of the use of agricultural products and related industries, ignorance of locals about the benefits of tourism, lack of amenities and the generation of environmental pollution. The latter is significantly related to tourism development (Zalaghi et al., 2022).

A study conducted by Alizadeh and Mahmoudi beram (2023) in the field of tourism development entitled "Identification, Classification, and Prioritization of Social Resilience Criteria and Indicators in Iran". This study identified and categorized seven groups of criteria: social, managerial, physical, economic, cultural, psychological, spiritual and environmental criteria, which included 16 main criteria, 42 sub-criteria and 379 indicators. The majority of the indicators belonged to the social and management criteria groups (Alizadeh & Mahmoudi beram, 2023).

Zarrabi et al. (2021) in their article "Evaluation of Sustainable Urban Development with Emphasis on the Resilience Approach in Informal Settlements of Sanandaj" reported a resilience score of 3.11, indicating a lack of resilience within the informal settlements (Zarrabi et al., 2021). Hosseini et al. (2020) in their article "Analysis of Social Resilience Based on Social Capital Indicators in Tehran" identified eight factors that contribute to social resilience from a social capital perspective: shared values and beliefs, sense of place, awareness building, participatory engagement, social-institutional networks for Crisis management, intimacy and responsibility, social trust and institutional trust building (Hosseini et al., 2020).

Naylor et al. (2021) in their article "Emic Perspectives of Community Resilience and Coastal Tourism Development" highlighted the rapidly changing, institutionally complex and culturally diverse nature of coastal communities and emphasized their vulnerability to anthropogenic changes (Naylor et al., 2021). Yustiana et al. (2021), in their article "An Analytical Study of the Impact of Coastal Reclamation on National Resilience", described coastal reclamation as an attempt to create new land in coastal areas, pursued by providing essential factors from ecological, economic and socio-cultural perspectives. The role of each aspect in the national resilience system resulting from reclamation is analyzed (Yustiana et al., 2021).

Gunaratne and Kremer (2021), in their article "The Long-Term Impact of Socio-Cultural Resilience of the 2004 Tsunami on Sri Lankan Survivors," argued that resilience in collectivist cultures is strongly influenced by social factors and provided insights into the offerings of life resilience groups. Concepts related to information dissemination as well as relevant cultural definitions and theories are discussed (Gunaratne & Kremer, 2021).

Based on existing research in tourism, it is evident that many countries recognize sports tourism as a significant industry within their national economies. Furthermore, considering the collective perspectives and research on tourism, it can be asserted that current trends in tourism development and growth within the country suggest promising potential for domestic ecotourism initiatives, particularly within coastal and aquatic regions. Given Iran's extensive coastline exceeding 2000 kilometers and its diverse, four-season climate, especially in coastal areas, the country is well-positioned to benefit from this potential. Therefore, rigorous research is necessary to scientifically identify existing obstacles to tourism expansion and development, facilitating the implementation of effective solutions to address these challenges.

The development of tourism in coastal areas, particularly in Bushehr Province, which is well suited for such growth, requires assessment of resilience from various economic, social, cultural and environmental perspectives. Initially, environmental concerns attracted the most attention; However, today all three dimensions are viewed as equally

important. The management and development of tourism in coastal regions can only be successful if the connection between the social and cultural aspects of resilience is recognized. To fill this research gap, this study aimed to investigate the impact of socio-cultural resilience dimensions of coastal regions on sustainable tourism development in coastal regions of Bushehr, Iran.

## 3. Research Methodology

### *3.1. Geographical Scope of the Research*

Būshehr, a coastal region in southwestern Iran, borders the Persian Gulf to the west and is bounded by the Hormozgān and Fārs regions to the southeast and east and by Khūzestān to the northwest. Inland, the region is part of the Zagros Mountains and consists of highland fingers within a plateau (Britannica, 2020). The Shāpūr River drains the region and serves as an inland waterway from the Persian Gulf coast at Būshehr, the region's capital. Rainfall in the region is low and sporadic. Agriculture is the main occupation; Crops include wheat, barley, date palms, mangoes and citrus fruits. The industry produces woven fabrics, milled rice and flour, building materials and processed foods. The region is home to numerous oil and natural gas fields and there are natural gas pipelines from the interior to the coastal town of Kangān. Kharg Island is located in the Persian Gulf 34 miles (55 km) northwest of the city of Būshehr and is a major crude oil terminal (Britannica, 2020).


**Figure 1. The geographical location of Coastal Regions of Bushehr**

### *3.2. Methodology*

The research is applied in terms of its objective and is correlational-descriptive in nature. Based on the type of data collected and analyzed, it is a quantitative study. The target population comprised 1686 socio-cultural experts involved in tourism development in Bushehr City. A sample of 313 participants was selected using random sampling, based on Cochran's formula. The study utilized two questionnaires: a Sustainable Tourism Development questionnaire and a Socio-Cultural Resilience questionnaire.

***3.2.1. The Sustainable Tourism Development questionnaire***, developed and validated Choi and Sirakaya (2006), consists of 20 closed-ended items using a five-point Likert scale across four dimensions: cultural, environmental, economic, and social (Choi & Sirakaya, 2006). In the study conducted by Gholami (2003) the reliability was reported to be 0.63 (Zamani et al., 2011).

***3.2.2. The Socio-Cultural Resilience for Coastal Tourism questionnaire***, developed by sociologists, comprises 80 closed-ended items using a five-point Likert scale. It assesses social resilience through four dimensions: Social Self-Regulation (items 1-10), Social Empowerment (items 11-20), Social Emotion (items 21-30), and Social Responsibility (items 31-40). Cultural resilience is measured through four dimensions: Cultural Diversity (items 41-50), Local Dialect (items 51-60), Ethnic and Racial Diversity (items 61-70), and Religious Diversity (items 71-80). the reliability of the test was reported as 0.67 and 0.69 in studies conducted by Nikdel (2006) and Arabzadeh (2008), respectively (Zamani et al., 2011).The validity and reliability of this questionnaire were also tested.

## 4. Research Findings

### *4.1. Demographic Characteristics*

The results showed that of the 313 participants in the present study, 214 were men (68.4%) and 99 were women (31.6%). Therefore, it can be seen that the majority of participants were men. Additionally, 176 participants were married (56.2%) and 137 were single (43.8%). Therefore, based on Table 1, it can be said that most of the study participants were married. In addition, it was found that 9 respondents were 25 years or younger (2.9%), 35 participants were in the age group of 25 to 35 years (11.2%), 90 participants were in the age group of 35 to 45 years ( 28.8%). %). 118 participants were in the age group 45–55 years, while 61% (191 participants) were 55 years or older. According to the descriptive results, most of the respondents were in the 45-55 age group. Most participants had a master's degree, 138 (44.1%), followed by 96 participants (30.7%) with a bachelor's degree. Based on data analysis, more than 74% of respondents had either a bachelor's or master's degree. It was also found that 71 respondents (22.7%) had studied in fields related to tourism, 49 respondents (15.7%) in economics, 49 respondents (15.7%) in environmental and natural sciences and 74 respondents (23.6%) in humanities and cultural studies, 20 respondents (6.4%) in medical and paramedical fields, 11 respondents (3.5%) in art and painting and finally 32 respondents (10.2%) in other areas. According to the descriptive results, the majority of respondents have a degree in humanities and cultural studies, closely followed by those with tourism-related disciplines. Table (1) summarizes the demographic characteristics, categories, frequencies, and percentages of the respondents in the study.

**Table 1. The demographic characteristics of participants**

| Demographic Characteristic | Category | Frequency | Percentage (%) |
|---|---|---|---|
| Gender | Male | 214 | 68.4 |
| | Female | 99 | 31.6 |
| Marital Status | Married | 176 | 56.2 |
| | Single | 137 | 43.8 |
| Age Group | 25 years and under | 9 | 2.9 |
| | 25-35 years | 35 | 11.2 |
| | 35-45 years | 90 | 28.8 |
| | 45-55 years | 118 | 37.7 |
| | 55 years and older | 61 | 19.5 |
| Education Level | Bachelor’s Degree | 96 | 30.7 |
| | Master’s Degree | 138 | 44.1 |
| | Other (e.g., PhD) | - | - |
| Field of Study | Tourism-related Fields | 71 | 22.7 |
| | Economics | 49 | 15.7 |
| | Environmental & Natural Resources | 49 | 15.7 |
| | Humanities and Cultural Sciences | 74 | 23.6 |
| | Medical and Paramedical Fields | 20 | 2.2 |
| | Arts and Painting | 11 | 3.5 |
| | Other Fields | 11 | 10.2 |

To compare the means of the variables, an independent one-sample t-test was used. The results are shown in Table (2).

**Table 2. One- sample t-test results**

| Variable | T | Degree of freedom | Significant level | Deviation from the mean | Mean difference | The difference is at a significance level of ۹۵٪ | |
|---|---|---|---|---|---|---|---|
| | | | | | | down | up |
| Socio-cultural resilience | 122.73 | 312 | 0 | 1.0864 | 132.624 | 130.487 | 134.762 |
| Social resilience | 100.264 | 312 | 0 | 1.394 | 139.741 | 137 | 142.48 |
| Social self-regulation | 82.377 | 312 | 0 | 1.699 | 139.949 | 136.61 | 143.29 |
| Social excitement | 79.616 | 312 | 0 | 1.834 | 146.032 | 142.42 | 149.64 |
| Social competence | 64.805 | 312 | 0 | 2.109 | 136.703 | 132.55 | 140.85 |
| Social responsibility | 49.472 | 312 | 0 | 2.755 | 136.281 | 130.86 | 141.7 |
| Cultural resilience | 83.132 | 312 | 0 | 1.51 | 125.508 | 122.54 | 128.48 |
| Cultural diversity | 65.617 | 312 | 0 | 2.024 | 132.818 | 128.84 | 136.8 |
| Variation of local dialect | 44.244 | 312 | 0 | 2.715 | 120.128 | 114.79 | 125.47 |
| Ethnic and racial diversity | 58.398 | 312 | 0 | 2.133 | 124.55 | 120.35 | 128.75 |
| Diversity of religion | 57.029 | 312 | 0 | 2.184 | 124.537 | 120.24 | 128.83 |
| Sustainable development of tourism in coastal areas | 92.675 | 312 | 0 | 1.459 | 135.182 | 132.31 | 138.05 |
| Cultural dimension | 87.889 | 312 | 0 | 1.617 | 142.096 | 138.91 | 145.28 |
| Environmental dimension | 61.274 | 312 | 0 | 2.177 | 133.406 | 129.12 | 137.69 |
| Economic dimension | 65.169 | 312 | 0 | 2.033 | 132.511 | 128.51 | 136.51 |
| Social dimension | 57.408 | 312 | 0 | 2.312 | 132.716 | 128.17 | 137.26 |

The results section presents the sample mean, sample standard deviation, and standard error of the mean. The table (2) also displays the calculated t-value, degrees of freedom, and significance level. The most important point in this table is the significance level, which is less than 0.05, indicating that there is a statistically significant difference with 95% confidence between the actual and assumed mean. It can be concluded that the mean values of the research variables differ significantly from each other. In Table (3), the model measurement is examined and confirmed using the values of factor loadings, composite reliability, Cronbach's alpha, and convergent and discriminant validity.

**Table 3. Composite reliability value, Cronbach's and homogenous reliability and average variance ofthe model**

| Variable | Cronbach's alpha | homogeneous reliability ( coefficient rho) | Composite reliability | Average Variance Extracted( ( AVE |
|---|---|---|---|---|
| Sustainable development of tourism | 0.887 | 0.906 | 0.907 | 0.561 |
| Social dimension | 0.926 | 0.932 | 0.938 | 0.605 |
| Economic dimension | 0.865 | 0.897 | 0.885 | 0.545 |
| Environmental dimension | 0.913 | 0.919 | 0.929 | 0.570 |
| Cultural dimension | 0.847 | 0.878 | 0.876 | 0.527 |
| Social resilience | 0.916 | 0.940 | 0.923 | 0.602 |
| Cultural resilience | 0.912 | 0.937 | 0.916 | 0.586 |
| Cultural diversity | 0.897 | 0.916 | 0.916 | 0.529 |
| Ethnic and racial diversity | 0.917 | 0.931 | 0.931 | 0.579 |

| | | | | |
|---|---|---|---|---|
| Religious diversity | 0.912 | 0.942 | 0.928 | 0.573 |
| Variation of local dialect | 0.961 | 0.645 | 0.960 | 0.709 |
| Social competence | 0.932 | 0.945 | 0.944 | 0.629 |
| Social self-regulation | 0.835 | 0.845 | 0.870 | 0.606 |
| Social responsibility | 0.966 | 0.967 | 0.971 | 0.769 |
| Social excitement | 0.917 | 0.947 | 0.930 | 0.574 |

Composite reliability or convergent validity occurs when the composite reliability is greater than 0.7. In addition, the composite reliability must be greater than the average variance extracted (AVE). In this case, all conditions for convergent validity are met. The coefficient of congeneric reliability (rho) is also used to measure the internal consistency of constructs. According to Chin (1998), the Rho coefficient is considered more reliable than Cronbach's alpha (Chin, 1998). The value of the Rho coefficient should be greater than 0.7. In addition, the values of Cronbach's alpha should also exceed 0.7 and the average variance extracted should be greater than 0.5 to be validated. According to Table (3), all of these coefficients for the research variables are at an acceptable level relative to the minimum requirements.

**Table 4. S tatistical T value, $F^2$ ,$R^2$ and $Q^2$ to express the structure of the model**

| Variable | t statistic | F2 | $R^2$ | | Q2 |
|---|---|---|---|---|---|
| | | | $R^2$ | $R^2$adjusted | |
| Social resilience | 9.612 | 5.859 | 0.995 | 0.995 | 0.296 |
| Socio-cultural resilience of coastal areas | 28.408 | 1.432 | 0.939 | 0.939 | 0.136 |
| Sustainable development of tourism | --- | 1.432 | 0.588 | 0.589 | 0.088 |
| Social dimension | --- | 0.596 | 0.373 | 0.371 | 0.248 |
| Economic dimension | --- | 1.480 | 0.596 | 0.597 | 0.224 |
| Environmental dimension | --- | 2.371 | 0.702 | 0.703 | 0.373 |
| Cultural dimension | --- | 1.033 | 0.507 | 0.508 | 0.195 |
| Cultural resilience | 5.608 | 2.496 | 0.978 | 0.979 | 0.275 |
| Cultural diversity | 8.003 | 2.322 | -- | -- | 0.069 |
| Ethnic and racial diversity | 12.342 | 3.301 | -- | -- | 0.073 |
| Religious diversity | 9.861 | 2.442 | -- | -- | 0.086 |
| Variation of local dialect | 7.725 | 4.181 | -- | -- | 0.097 |
| Social competence | 15.08 | 17.807 | -- | -- | 0.074 |
| Social self-regulation | 10.609 | 7.704 | -- | -- | 0.257 |
| Social responsibility | 34.219 | 36.602 | -- | -- | 0.426 |
| Social excitement | 9.329 | 10.041 | -- | -- | 0.004 |

As shown in Table (4), the t-statistic values for all variables are greater than 1.96 and significant at the 0.05 level. Among the variables, social resilience in particular has the greatest influence. In addition, the $Q^2$ statistic indicates the predictive power of the model with respect to endogenous constructs. Models

with acceptable structural fit should have the ability to predict the endogenous variables of the model. That is, if the relationships between constructs in a model are correctly defined, the constructs have sufficient influence on each other and thus accurately confirm the hypotheses. Henseler et al. (2016) identified three values of 0.02, 0.15, and 0.35 as indicators of low, medium, and strong predictive power, respectively (Henseler et al., 2016). Predictive power for all variables ranged from moderate to strong, indicating appropriate predictive accuracy for these constructs. The highest predictive power in the model for sustainable tourism development in coastal areas is attributed to the social responsibility component of social resilience.

**Table 5. The goodness of fit criteria of the research model**

| Variables | acceptable range | observed value | the result |
|---|---|---|---|
| SRMR | < 0.08 (Hu & Bentler, 1999) | 0.049 | proper fit |
| d-ULS | < 0.95 (Henseler et al., 2015) | 0.465 | proper fit |
| d-G1 | < 0.95 (Henseler et al., 2015) | 0.596 | proper fit |
| d-G2 | < 0.95 (Henseler et al., 2015) | 0.439 | proper fit |
| Chi-square | > 1.96 (Hu & Bentler, 1999) | 2754.5231 | proper fit |
| NFI | > 0.25 (Bonett & Bentler, 1999) | 0.594 | proper fit |

Table (5) shows the fit indices of the research model. Based on the obtained values, the collected data for measuring latent variables shows sufficient adequacy and fit. Consequently, the results derived from the research model estimation are reliable and trustworthy. Model fit assessment is critical in structural equation modeling because it indicates how well the theoretical model matches the empirical data. To assess the quality of the model, various fit indices such as RMSEA, CFI and NFI are commonly used. If the values obtained from these indices are within acceptable ranges, it can be concluded that the research model has sufficient validity and reliability, making it a credible tool for data analysis.

**Table 6. The regression coefficient of the model 's independent variable**

| Description | Coefficient | T Statistic | significant level |
|---|---|---|---|
| Socio-cultural resilience -> sustainable development of tourism | 0.767 | 28.408 | 0.000 |
| Social resilience -> sustainable development of tourism | 0.677 | 9.612 | 0.000 |
| Cultural resilience -> sustainable development of tourism | 0.442 | 5.608 | 0.000 |

The results in Table (6) showed that the independent variable of sociocultural resilience has an impct on the dependent variable of sustainable tourism development. In addition, the components associated with this variable, including social resilience and cultural resilience, each influence the level of tourism development through their respective components. The direction of this impact, as indicated by the positive regression coefficients in the developed model, is constructive and direct. This means that improvements in social and cultural resilience in regions will lead to an increase and improvement in sustainable tourism development in the four proposed dimensions: cultural, environmental, economic and social.

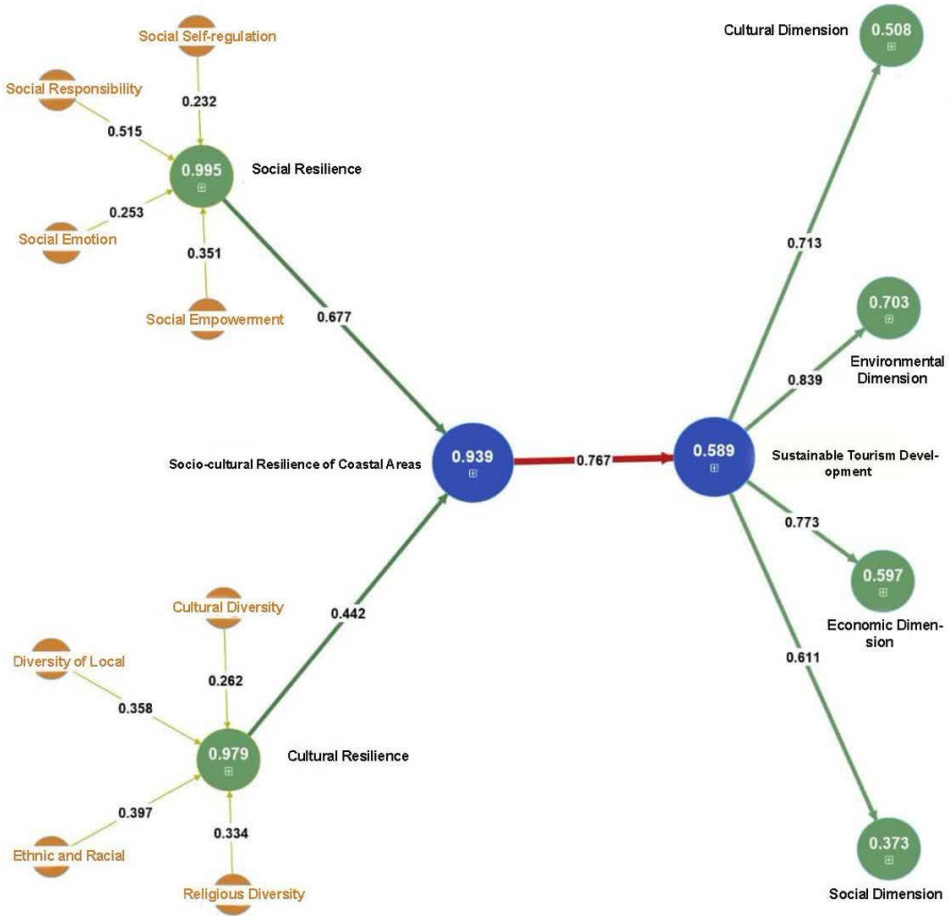


**Figure 2. Standard Regression Coefficients of the Research Model**

Based on the fitted model, the standardized regression coefficient for the impact of socio-cultural resilience in coastal areas on tourism development, as the dependent variable, is 0.767. The regression coefficients for its components, including the cultural, environmental, economic, and social dimensions, were calculated as 0.713, 0.839, 0.773, and 0.611, respectively. These coefficients were also assessed in relation to the components of social and cultural resilience. The coefficient of determination ($R^2$) for the variable of sustainable tourism development is 0.589, meaning that socio-cultural resilience, through its defined components, explains 58.9% of the changes in sustainable tourism development in coastal regions. The impact on the various dimensions of development, including cultural, environmental, economic, and social, was calculated as 0.508, 0.703, 0.597, and 0.373, respectively, corresponding to 50.8%, 70.3%, 59.7%, and 37.3%. In other words, these variables, with the specified coefficients of determination, are influenced by the independent variable (socio-cultural resilience), and the environmental dimension is the most affected aspect of sustainable tourism development in the coastal areas of Bushehr. To assess significance, the t-statistic was compared with the value of 1.96. Since the t-statistic exceeds this value, the relationship is considered significant.

## 5. Discussion and Conclusion

The results showed a significant positive relationship between socio-cultural resilience in coastal regions and the level of tourism development in Bushehr Province. The regression coefficient for the impact of sociocultural resilience on tourism development as a dependent variable was 0.767. The regression coefficients for the cultural, environmental, economic and social dimensions were 0.713, 0.839, 0.773 and 0.611, respectively. The coefficient of determination ($R^2$) for sustainable tourism development was 0.589, indicating that 58.9% of the variance in sustainable tourism development in coastal areas can be explained by sociocultural resilience. The $R^2$ values for the cultural,

environmental, economic and social dimensions were 0.508 (50.8%), 0.703 (70.3%), 0.597 (59.7%) and 0.373 (37.3%), respectively. The environmental dimension showed the strongest association with sustainable tourism development in the coastal regions of Bushehr. The positive regression coefficients in the model indicate a constructive and direct relationship, suggesting that improvements in sociocultural resilience have a positive impact on sustainable tourism development in all four dimensions (cultural, environmental, economic and social). Therefore, the hypothesis that sociocultural resilience in coastal areas significantly influences tourism development in Bushehr Province was supported with a confidence level of 95%.

The results obtained are consistent with the findings of the studies by Movahedi and Amiri, (2023); Zalaghi et al. (2022); Alizadeh and Mahmoudi beram (2023); Zarabi et al. (2021); Hosseini et al. (2020); Naylor et al. (2021); and Yustiana et al. (2021). Additionally, Movahedi and Amiri (2023) stated that the development of tourism requires a certain level of social, political, and cultural components to serve as a successful tool for sustainable development and to maintain the sustainability of communities. Based on the literature review and the examination of various theorists' studies, a combination of factors constituting social components was considered, wherein there exists a mutual dependency among these key factors, each influencing the others in specific ways. In this research, the relationship between these factors and sustainable tourism development was articulated within a conceptual model. The findings derived from the validated model indicated a significant relationship between the latent variables under study (socio-cultural resilience and sustainable tourism development in regions). In fact, it can be stated that the components of social and cultural resilience influence residents' attitudes and their level of support for sustainable tourism development. To explain the results of this hypothesis, it can be stated that tourism is one of the main sectors that gained great attention in various countries in the late 20th century, making it one of the largest industries in the world. The importance of this sector requires comprehensive and up-to-date studies, with a particular focus on examining the impact of socio-cultural resilience in line with current global needs. Sociocultural resilience expands the possibilities of the individual. Resilience is one of the foundations of development and serves not only as a factor for the growth of various sectors, including tourism and sustainable development, but also as a means to achieve a more fulfilling life in spiritual, ethical, emotional and intellectual terms. The level of tourism development in different regions varies depending on the level of socio-cultural resilience. This deviation has several reasons. One of these resons is the great interest of planners and policy makers in highlighting the cultural aspects of their cities through multicultural measures. This is the main reason for proposing tourism development strategies in this context as no government can develop its cultural manifestations without such measures. In fact, a country's cultural policy approach acts as a comprehensive framework that includes other indicators of socio-cultural resilience. Since, Bushehr Province, has beautiful beaches, significant natural potential and numerous cultural and tourist attractions, it has a high capacity for economic activities. As Bushehr Province is able to create favorable conditions for enthusiasts, it has suitable capacity to host various water and beach competitions. Therefore, it can be considered an important hub of the tourism industry in general and sports tourism in particular. Due to the psychological need of modern man for recreation in various natural areas, especially sports practiced on the sea coasts, a well-planned approach can utilize the talents of different regions of the province, taking into account different conditions. This can promote economic goals and job creation while creating a suitable environment for tourists and improving infrastructure. With the increase in natural resources, the status of coastal tourism is also on the rise, and the availability of suitable natural resources can attract tourists and develop sports tourism in the Bushehr Province. Through proper and targeted planning, optimal use of these God-given natural resources can be achieved.

This study acknowledges several limitations. Internal limitations include the localized scope within Bushehr Province, which hinders the generalizability of the results; possible inaccuracies due to incomplete or inaccurate responses to the questionnaire; Difficulties in accessing specific individuals for questionnaire administration; and difficulties in ensuring organizational collaboration in sales. Furthermore, the sample is limited to tourism professionals, including experts, managers and representatives of heritage and tourism organizations as well as active tourism groups within the province,

which limits the representativeness of the results. External limitations include the lack of comparable research at home and abroad, which limits contextual understanding. Difficulties in accessing the target group within the study area; participant reluctance and lack of familiarity with key research concepts; the use of diverse, non-standardized questionnaires; and the influence of respondents' varying levels of experience, knowledge, accuracy and motivation on their answers. These limitations should be taken into account when interpreting the study results.

To promote sustainable tourism in Bushehr Province, this study recommends a multi-pronged approach. It is crucial to prioritize social resilience by involving the community in tourism planning, establishing local working groups and promoting trust building between communities. In addition, the revitalization of local cultural heritage, including the registration of intangible cultural assets such as rituals and artistic expressions, as well as the organization of ethnic events can enrich the socio-cultural fabric and attract tourists. In parallel with these socio-cultural initiatives, expanding economic infrastructure and improving livelihoods will improve community well-being and support tourism initiatives. In practice, leveraging Bushehr's geographical advantages by promoting its natural areas and coastal attractions, developing tourism infrastructure including accommodation and leisure facilities, and highlighting the potential for health-oriented tourism such as sun and sand therapy can significantly boost the province's tourism industry. If these recommendations are implemented strategically, they can create a sustainable and thriving tourism sector in Bushehr.

**Acknowledgments**

The current paper is extracted from the doctoral dissertation of the first author (Iraj Mohebizadeh) in Sociology, Bushehr Branch, Islamic Azad University, Bushehr, Iran.

**Authors′ contributions**

The authors equally contributed to the preparation of this article.

**Conflict of interest**

The authors report no conflict of interest.

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*Journal of Research and Rural Planning*
Volume 13, No. 4, Autumn 2024, Serial No. 47, Pp. 81-96
**eISSN: 2783-2007** **ISSN: 2783-2791**
http://jrrp.um.ac.ir

**Original Article**

# بررسی تاثیر ابعاد تاب آوری اجتماعی- فرهنگی مناطق ساحلی بر توسعه پایدار گردشگری (مطالعه موردی: مناطق ساحلی بوشهر)

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## چکیده مبسوط

### ۱.مقدمه

امروزه توسعه گردشگری در کشورهای مختلف چه به لحاظ اقتصادی و چه از جنبه‌های فرهنگی-اجتماعی و سیاسی موردتوجه همگان قرار گرفته است. توسعه گردشگری در مناط ساحلی بخصوص در استان بوشهر که مستعد توسعه گردشگری در مناطق ساحلی می‌باشد نیاز به ارزیابی تاب‌آوری از جنبه‌های مختلف اقتصادی، اجتماعی فرهنگی و زیست‌محیطی می‌باشد. در ابتدا علایق زیست‌محیطی بیشترین توجه را جلب کرده بود اما امروزه هر سه بعُد از ارزش یکسانی برخوردارند. مدیریت گردشگری و توسعه آن در مناطق ساحلی در صورتی می‌تواند موفقیت‌آمیز باشد که ارتباط بین این دو بعد تاب‌آوری اجتماعی و فرهنگی شناسایی شود. در این مطالعه سعی بر آن است تا به بررسی تاب‌آوری بعُد اجتماعی فرهنگی توسعه گردشگری در مناطق ساحلی استان بوشهر پرداخته شود. هدف از این بررسی محک پایداری یا ناپایداری توسعه گردشگری در زمینه‌های اجتماعی-فرهنگی رشد و توسعه گردشگری در جامعه میزبان مناطق ساحلی استان بوشهر است. به عبارتی هدف پاسخگویی به این سؤالات است که آیا تاب‌آوری اجتماعی-فرهنگی مناطق ساحلی بر توسعه گردشگری استان بوشهر تأثیر دارد؟ آیا خودتنظیمی اجتماعی، هیجان اجتماعی، توانمندی اجتماعی و مسئولیت‌پذیری اجتماعی به‌عنوان مؤلفه تاب‌آوری اجتماعی بر توسعه گردشگری استان بوشهر تأثیر دارد؟ آیا تنوع فرهنگی، گویش مردم محلی، قومیت و نژاد و تنوع مذهب به‌عنوان مؤلفه تاب‌آوری فرهنگی بر توسعه گردشگری استان بوشهر تأثیر دارد؟

### ۲. مبانی نظری تحقیق

رشد فعالیت‌های گردشگری در مناطق ساحلی در دهه‌های اخیر با تأثیرگذاری عمیق بر بنیان‌های اقتصادی، اجتماعی و زیست‌محیطی، فرایند توسعه در حوزه مناطق ساحلی شهر بوشهر (محدوده موردمطالعه این تحقیق)، را با چالش‌های جدی روبرو ساخته است. به‌طوری‌که در کنار منافع عمدتاً اقتصادی مجموعه‌ای از هزینه‌های اجتماعی و زیست‌محیطی و فرهنگی ناشی از رشد فعالیت‌های گردشگری در حوزه‌های گردشگری شهرستان نمایان شده است. یافته‌های اولیه نشان می‌دهد روند توسعه فعالیت‌های گردشگری در حوزه موردمطالعه با تخریب منابع گردشگری و اثرات منفی بر ابعاد کالبدی، اجتماعی و فرهنگی جامعه میزبان گذاشته و از اصول توسعه پایدار گردشگری فاصله گرفته است. به‌عبارت‌دیگر به خاطر عدم برنامه راهبردی و نداشتن الگو و استراتژی خاص، روند ساخت‌وسازهای پراکنده فرم لجام گسیخته‌ای به منطقه داده که باعث تغییرات کاربری اراضی به‌صورت غیراصولی و پراکنده و تخریب چشم‌اندازهای منطقه شده است، نقش گردشگری به‌عنوان عامل محرک در حال تبدیل‌شدن به عامل مخرب در روند توسعه شهری شده است. این امر در تضاد با اصول توسعه پایدار گردشگری، به‌عنوان شاهدی بر روند ناپایداری توسعه حوزه موردمطالعه، روند نامطلوب توسعه و افول کیفیت مقصد و اُفت بازارهای آتی آن را گوشزد می‌کند. بنابراین لازم است تا با شناخت توانمندی‌ها و محدودیت‌های موجود الگوها و استراتژی‌هایی تدوین گردد تا بتوان بیشترین بهره را از آن‌ها برد درعین‌حال که پایداری آن‌ها در جوانب مختلف نیز تضمین گردد.

### ۳. روش تحقیق

پژوهش از نظر هدف کاربردی، و از لحاظ ماهیت تحقیق همبستگی- توصیفی می باشد. بر اساس نوع داده‌هایی که جمع‌آوری و تحلیل شد، تحقیقی کمی است. جامعه آماری تحقیق مذکور کلیه خبرگان اجتماعی-فرهنگی فعال در زمینه توسعه گردشگری (شهر بوشهر) به تعداد ۱۶۸۶ نفر بود که با توجه به فرمول کوکران ۳۱۳ نفر برای نمونه به روش تصادفی انتخاب شدند. در روش تحقیق از

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پرسشنامه توسعه پایدار گردشگری و پرسشنامه تاب‌آوری اجتماعی – فرهنگی استفاده شد. پرسشنامه توسعه پایدار گردشگری توسط چویی و همکاران (۲۰۰۶) در قالب ۲۰ گویه بسته پاسخ بر اساس طیف پنج‌درجه‌ای لیکرت در چهار بعد فرهنگی، زیست‌محیطی، اقتصادی و اجتماعی طراحی و اعتبار یابی شده است و پرسشنامه تاب‌آوری اجتماعی-فرهنگی مناطق ساحلی برای گردشگری توسط محققین مختلف حوزه جامعه‌شناسی در قالب ۸۰ گویه بسته پاسخ بر اساس طیف پنج‌درجه‌ای لیکرت در ابعاد خودتنظیمی اجتماعی استفاده شد که روایی و پایایی آن نیز مورد آزمون قرار گرفت. برای بررسی روابط علی بین متغیرها به‌صورت منسجم کوشش‌های زیادی در دهه اخیر صورت گرفته است. یکی از این روش‌ها برای انجام تحلیل عاملی تأییدی، معادلات ساختاری یا تحلیل چند متغیری با متغیرهای مکنون است.

## ۴. یافته‌های تحقیق

نتایج یافته ها نشان داد که تأثیر تاب‌آوری اجتماعی-فرهنگی مناطق ساحلی بر توسعه گردشگری به‌عنوان متغیر وابسته برابر با ۰/۷۶۷ است. همچنین ضریب رگرسیونی بعد فرهنگی، بعد زیست‌محیطی، بعد اقتصادی و بعد اجتماعی به ترتیب برابر با ۰/۷۱۳، ۰/۸۳۹، ۰/۷۷۳ و ۰/۶۱۱ محاسبه شد. مقدار ضریب تعیین ($R^2$) برای متغیر توسعه پایدار گردشگری ۰/۵۸۹ می‌باشد که بیان‌گر آن است که میزان ۵۸/۹ درصد از تغییرات توسعه پایدار گردشگری در مناطق ساحلی توسط تاب‌آوری اجتماعی-فرهنگی تبیین می‌شود و این مقدار برای بعد فرهنگی، زیست‌محیطی، اقتصادی و اجتماعی نیز به ترتیب برابر با ۰/۵۰۸، ۰/۷۰۳، ۰/۵۹۷ و ۰/۳۷۳ محاسبه شده است که به ترتیب برابر با ۵۰/۸ درصد، ۷۰/۳ درصد، ۵۹/۷ درصد و ۳۷/۳ درصد می‌باشد. بیشترین بعد تأثیرپذیر توسعه پایدار گردشگری در مناطق ساحلی بوشهر مربوط به بعد زیست‌محیطی بوده است و جهت این اثربخشی با توجه به علامت مثبت ضرایب رگرسیونی در مدل ایجاد شده، از نوع سازنده و مستقیم می‌باشد، بدین معنی که با بهبود وضعیت تاب‌آوری اجتماعی و فرهنگی در مناطق میزان توسعه پایدار گردشگری در چهار بعد مطرح شده شامل ابعاد فرهنگی، زیست‌محیطی، اقتصادی و اجتماعی افزایش و بهبود خواهد یافت. پس درنهایت این فرضیه که تاب‌آوری اجتماعی-فرهنگی مناطق ساحلی بر سطح توسعه گردشگری استان بوشهر تأثیر معناداری دارد با سطح اطمینان ۰.۹۵ مورد تائید قرار گرفت.

## ۵. بحث و نتیجه‌گیری

با توجه به اینکه ایران و بخصوص استان بوشهر دارای سواحل زیبا و پتانسیل‌های طبیعی و جاذبه‌های سیاحتی و فرهنگی بسیار و از طرفی برخورداری از ظرفیت بالای فعالیت‌های اقتصادی به‌عنوان استانی توانمند در آماده‌سازی شرایطی مطلوب برای علاقه‌مندان است و با توجه به اینکه از ظرفیت و قابلیت مناسبی برای برگزاری انواع مسابقات آبی و ساحلی برخوردار می‌باشد، می‌تواند به‌عنوان قطبی مهم در صنعت توریسم به معنای عام و توریسم ورزشی در معنای خاص آن تلقی گردد و به‌واسطه نیاز روحی روانی انسان امروزی به تفریح در مناطق مختلف طبیعی و بخصوص ورزش‌هایی که در سواحل دریا صورت می‌گردد، با یک برنامه‌ریزی حساب شده ضمن بهره‌گیری از استعداد مناطق مختلف استان و لحاظ کردن شرایط مختلف می‌توان در پیشبرد اهداف اقتصادی و اشتغال‌زایی گام برداشت و هم محیط مناسبی برای گردشگران به وجود آورد و همچنین بهبود زیرساخت‌ها را فراهم کند. با توجه به افزایش منابع طبیعی، وضعیت ساحل نوردی نیز افزایش می‌یابد و برخورداری از منابع طبیعی مناسب می‌تواند باعث جذب گردشگر و توسعه گردشگری ورزشی در استان شود. فضاهای ساحلی و دریایی موجود در استان، مناظر طبیعی و پوشش گیاهی خاص در بعضی از نقاط سواحل در سطح استان، وجود جانوران باقابلیت زندگی در مناطق ساحلی و حتی خشکی استان، شرایط آب‌وهوایی مناسب که در فصل زمستان دارای دمای مناسب، چشم‌اندازهای طبیعی در جزایر استان و حتی آسمان شب در سواحل به جهت رصد ستارگان همه از جاذبه‌های متنوع و جزء لاینفک منابع طبیعی این اقلیم ساحلی می‌باشند. می‌توان با برنامه‌ریزی درست و هدفمند باعث استفاده بهینه از این منابع طبیعی خدادادی شد.

**کلیدواژه‌ها:** گردشگری، تاب‌آوری اجتماعی، تاب‌آوری فرهنگی، توسعه پایدار.

## تشکر و قدردانی

پژوهش حاضر برگرفته از رساله دکتری نویسنده اول (ایرج محبی‌زاده)، گروه علوم اجتماعی، دانشگاه آزاد اسلامی واحد بوشهر، بوشهر، ایران است.

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**How to cite this article:**
Mohebizadeh, I., Jafarinia, Gh., & Pasallarzadeh, H. (2024). Investigating the impact of socio-cultural resilience dimensions of coastal regions on sustainable tourism development (Case study: Coastal regions of Bushehr). *Journal of Research & Rural Planning, 1*3(4), 81-96.
http://dx.doi.org/10.22067/jrrp.v13i4.2410-1112

**Date:**
*Received: 24-02-2025*
*Revised: 31-03-2025*
*Accepted: 07-04- 2025*
*Available Online: 07-04-2025*

*Journal of Research and Rural Planning*
Volume 13, No. 4, Autumn 2024, Serial No. 47, Pp. 97-116
**eISSN: 2783-2007** **ISSN: 2783-2791**
http://jrrp.um.ac.ir

**Original Article**

# Analysis of Challenges and Barriers to Promoting Climate-Smart Agriculture in Rural Areas of the Sistan Plain: A Qualitative Approach

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## Abstract

**Purpose** – This study examines the barriers to promoting climate-smart agriculture (CSA) in rural areas of the Sistan Plain. Using a qualitative approach and focus group discussions, data were collected from farmers and local experts (54 participants). The discussions were analyzed through inductive content analysis, coding, and classification systems.

**Findings** – The results reveal that barriers to CSA promotion fall into seven main categories: financial, institutional, technical and infrastructural, knowledge gaps, demographic, environmental, and market challenges. Key challenges include high initial costs, weak policies and institutional support, lack of practical knowledge and training, and adverse climatic conditions. Practical recommendations involve conducting specialized training, establishing pilot projects, and strengthening communication infrastructure. From a policy perspective, developing national strategies, providing financial incentives and credit facilities, and fostering collaboration across various sectors are crucial. This study offers comprehensive and integrated solutions to assist policymakers and agricultural practitioners in achieving sustainable development and strengthening CSA resilience.

**Practical Implications** – This study proposes several practical solutions to address the identified challenges, including organizing specialized and operational training programs for farmers and experts, implementing pilot projects to demonstrate CSA effectiveness and benefits, developing communication and technical infrastructure such as high-speed internet access and advanced equipment, formulating national policies to provide financial and institutional support for CSA, and fostering collaboration among governmental, private, and local community sectors.

**Originality/Value** – This research is one of the first comprehensive studies analyzing barriers to CSA promotion in Iran. Given the unique conditions of the Sistan Plain, the findings can serve as a model for other underprivileged regions in Iran and similar countries. The practical solutions and effective policy recommendations presented here mark a significant step toward sustainable development and greater agricultural resilience to climate change.

**Keywords**- Agricultural productivity, Climate-smart agriculture, Farmer resilience, Rural development, Sistan Plain.

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**How to cite this article:**
Karimi, H., Ataei, P., & Pariab, J. (2024). Analysis of Challenges and Barriers to Promoting Climate-Smart Agriculture in Rural Areas of the Sistan Plain: A Qualitative Approach. *Journal of Research & Rural Planning, 1*3(4), 97-116.
http://dx.doi.org/10.22067/jrrp.v13i4.2501-1120

**Date:**
*Received: 07-02-2025*
*Revised: 07-04-2025*
*Accepted: 27-05- 2025*
*Available Online: 27-05-2025*

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## 1. Introduction

Climate change refers to any change over time, whether resulting from natural variability or human activities (Kom et al., 2020). Researchers largely attribute climate change to the accumulation of greenhouse gases emitted from human activities (Jamshidi et al., 2015; Abegunde et al., 2019). However, it affects natural and social systems (Makamane et al., 2023). Climate change is evident in continuous global warming, including the increased frequency of heat waves, the decline in rainfall events, the loss of rainfall in arid and semi-arid regions, the rise in sea level, and the increased probability of these aspects developing in a nonlinear and unpredictable manner (Komba & Muchapondwa, 2018; Atal, 2024). In pursuit of variations in climatic conditions, farmers who rely on minimally adaptive rainfed farming systems will be seriously affected, making them extremely vulnerable to climate change (Mujeyi et al., 2020; Mabhaudhi et al., 2025). Furthermore, smallholders have inherently low resilience to cope with the consequences of extreme climatic conditions (e.g., drought and flood), deep climatic disharmony, and change.

Agricultural production is the main source of livelihood in most rural communities of developing countries (Serote et al., 2021). It is essential for ensuring food security and alleviating poverty (Mutekwa, 2009; Adhikari et al., 2024), a point also mentioned in the Quran (Munir & Glorino Rumambo Pandin, 2023). The Food and Agriculture Organization (FAO, 2020) argues that the agricultural activities of rural households form the foundation of the food system and contribute to achieving two major sustainable development goals: no poverty and no hunger. Smallholder farmers are at the forefront of the rural economy in Iran. It is estimated that there are 500 million smallholder farmers worldwide, supporting the livelihoods of over 2 billion people, particularly in developing countries (Serote et al., 2021; Kamara et al., 2019). These farmers provide agricultural products for consumption, supply essential nutrients, and generate income to supplement social financial aid and government bills (Podineh et al., 2017; Abegunde et al., 2019; Larasati et al., 2024). In Iran, climate change has led to declining yields, complete crop losses, reduced quality, and the increasing spread of pests and diseases, severely affecting vegetable production (Pakrooh & Kamal, 2023; Najafi et al., 2023; Jahansoozi et al., 2024; Amani-Male et al., 2024).

Cooperation is essential in the fight against the effects of climate change (Musafiri et al., 2022). One key intervention is the adoption of climate-smart agricultural methods by smallholders. Climate-smart agriculture (CSA) is a sustainable approach developed by the FAO to support farming under changing climatic conditions. CSA benefits farmers facing the agricultural impacts of climate change, such as prolonged droughts, declining rainfall, and shifts in rainfall patterns, which negatively affect crop and livestock productivity (Ouédraogo et al., 2019). CSA serves as an alternative agricultural method, promoting environmental conservation while helping to meet the world's growing food demand (Musafiri et al., 2022; Oteng & Egbendewe, 2024).

CSA refers to a set of farming practices and technologies designed to simultaneously enhance productivity, improve adaptation, and reduce greenhouse gas emissions (Sahoo et al., 2025; Kagabo et al., 2025). While CSA builds upon existing agricultural knowledge, technologies, and sustainability principles, it stands out in several key aspects. First, it explicitly focuses on addressing climatic variations within agricultural systems. Second, it systematically considers the synergies and trade-offs between productivity, adaptation, and mitigation of effects. Third, it encompasses a broad range of practices and technologies tailored to specific agro-ecological conditions and socio-economic contexts. These include the adoption of climate-resistant species, conservation agriculture techniques, agroforestry, precision agriculture, water management strategies, and improved animal management. Despite its potential, CSA faces significant challenges in developing countries like Iran. A lack of attention to these challenges could hinder efforts to achieve sustainable agricultural development.

This research aims to uncover the challenges hindering the promotion and application of CSA practices in the Sistan plain, as seen from the perspectives of local experts and farmers. Many farmers in this region suffer agricultural losses due to Afghanistan's violation of water rights and severe climatic effects, such as consecutive droughts and the 120-day winds. The Sistan plain, one of Iran's oldest agricultural regions, relies on the inflow of water from the Hirmand River for its survival. Given the arid and semi-arid climate of

the region, agriculture is only viable if Afghanistan ensures a sustainable supply of water rights. However, in recent years, the decreasing water inflow, caused by factors such as dam construction in Afghanistan (e.g., the Kamalkhan dam), climate change, and declining rainfall, has created a severe crisis for farming and rural livelihoods. This hydrological drought has not only affected farmlands but has also dried local wetlands, intensified dust storms, and worsened rural migration. Several factors contribute to these vulnerabilities, including the region's unique geographical exposure to climatic disasters, fragile livelihoods, poor infrastructure, and demographic challenges, particularly the high dependence on agriculture for employment. By identifying the barriers to adopting CSA practices, policymakers in the agricultural sector can develop strategic plans for its advancement, focusing on facilitating farmers' adoption of these interventions.

In general, it can be acknowledged that the Sistan plain faces serious agricultural challenges, with one of the primary issues being the water supply crisis due to reliance on Hirmand water rights and Afghanistan's failure to uphold its international commitments. As a result, local agriculture is plagued by severe uncertainty and unsustainability, leading to declining productivity, increased migration, and worsening water security. These challenges are further exacerbated by climatic factors such as the 120-day winds, rising mean annual temperatures, and decreasing soil moisture, all of which negatively impact agricultural production. In such conditions, modern approaches like CSA can play a role in strengthening farmers' resilience. However, implementing CSA in a region already struggling with a water crisis requires a thorough examination of its constraints, opportunities, and practical requirements. Accordingly, this research aims to identify the barriers and challenges to promoting CSA in the rural areas of the Sistan plain.

## 2. Research Theoretical Literature

It is argued that the poor adoption of CSA technology is linked to several limiting factors, including high initial costs, technical knowledge requirements, expensiveness and limited availability, lack of insurance plans and financing mechanisms, and inadequate frameworks for monitoring smallholders (Ogunyiola et al., 2022). Makamane et al. (2023) highlighted that CSA practices play a crucial role in improving farmers' returns. However, challenges such as a lack of information, financial constraints, shortages of labor and inputs, and insufficient farm training hinder farmers from fully adopting CSA on their farms. As a result, key socioeconomic factors, farm characteristics, and institutional frameworks significantly influence the utilization of CSA by smallholders.

Another study identified key barriers to implementing CSA practices, including increased outbreaks of diseases and pests, limited access to agricultural technologies, and the high cost of various improved crops. The researchers concluded that smallholders' adaptation can be strengthened through the effective implementation of CSA practices (Baffour-Ata et al., 2023). File and Nhamo (2023) found that smallholders' decisions to adopt local practices for climate change adaptation were influenced by socio-demographic characteristics, access to farm capital, farm distance, the availability and reliability of the practices, input availability and cost, land ownership, access to extension services, and socio-cultural beliefs. Gabriel et al. (2023) concluded that farmers' needs on climate-smart adaptation, alleviation of implications, and profitability were solutions to reduce in-season crop loss, increase water use efficiency, and improve productivity.

Recent studies indicate that several factors influence farmers' decisions regarding the effective adoption of CSA technologies. Existing research primarily highlights economic benefits, along with other influential factors such as the farmer's education, farm location, household resources, farm size, farming experience, access to credit, availability of extension services, agricultural asset grants and information, market access, and support from local officials (George & Rwegasira, 2017; Kurgat et al., 2020; Nhantumbo et al., 2017). According to Sanogo et al. (2023), CSA adoption is significantly shaped by social factors, including age, educational level, experience in production systems, gender, marital status, and membership in cooperatives. Additional determinants of adoption include access to extension services, market availability, credit access, agro-climatic conditions, topography, water availability, policies and incentives, effective farmer training, family labor, crop insurance availability, economic viability, and technical capability for utilizing technology (Maddison,

2007; Alare et al., 2018; Zakaria et al., 2020; El-Chami et al., 2020).

Lupogo and Mkuna (2023) argue that farmers' decisions to adopt technology are influenced by socioeconomic, institutional, informational, and climatic factors. Socioeconomic factors include the age of the household head, gender, marital status, educational level, family size, off-farm family income, farming experience, and farm factors. Institutional factors encompass access to extension services, credit availability, membership in agricultural organizations, and farm distance from the market. The informational factor refers to access to climate-related information, while climatic factors include temperature and rainfall. The literature review suggests that a combination of challenges and barriers can slow down CSA extension and development. Identifying and categorizing these challenges from the perspectives of both farmers and experts can provide valuable insights for shaping CSA development policies.

Unlike previous studies that have primarily focused on the technical and climatic aspects of smart agriculture, this research emphasizes water governance and its role in CSA feasibility and viability in the Sistan plain. In addition to climatic challenges, we examine the influence of institutional, policy, and social factors in assessing the feasibility of this agricultural model. Building on the findings of previous studies, this research aims to offer a more comprehensive and pragmatic approach to sustainable agricultural development in the Sistan plain.

## 3. Research Methodology

### *3.1 Geographical Scope of the Research*

The research was conducted in the Sistan plain, located in Sistan and Baluchistan province in southeastern Iran. Covering an area of approximately 15,000 km², this key agricultural region relies heavily on the water rights of the Hirman River, which flows from Afghanistan. The area experiences a hot and arid climate, characterized by 120-day winds and severe fluctuations in water resources. These conditions have led to ongoing crises, including water scarcity, rural emigration, and a decline in farming productivity in recent decades.

Based on the latest administrative divisions in Iran, the Sistan plain consists of five counties, nine urban districts, seven cities, 18 rural districts, and 823 inhabited villages. This plain accounts for approximately 9.3% of the total area of Sistan and Baluchistan province and about 15.8% of its population. Data from the synoptic station indicate that the region receives an annual average precipitation of about 59 mm, with a mean annual temperature of approximately 22°C. The absolute maximum temperature recorded is 45.9°C, while the absolute minimum is around -4.4°C. The annual evapotranspiration rate reaches 2579 mm, and the estimated evaporation rate from cultivated land is about 5.87 mm.

### *3.2. Methodology*

The challenges and barriers to CSA promotion were identified using a qualitative methodology, for which the focus group technique was employed. This approach facilitates a structured group interview to gather opinions on a subject or phenomenon under study (Krueger & Casey, 2015). In other words, a focus group enables an organized discussion among selected individuals who are believed to represent various social classes (Mohammadpour, 2013). Like most qualitative research methods, this study utilized a purposive, qualitative, and criterion-based sampling technique. To implement the focus group, the practical design outlined by Stewart and Shamdasani (2015) was followed. This design consists of eight steps, addressing the rationale, procedures, and distinctive characteristics of the focus group method.

The first step is to define the research problem and formulate guiding questions. Identifying the problem helps establish an operational definition of research objectives and facilitates their achievement. The key problem is that the agricultural sector in the Sistan plain is facing challenges and barriers to the promotion of CSA. Accordingly, the central research question was developed to examine these challenges and barriers from various perspectives: What are the challenges and barriers to CSA promotion in the Sistan plain?

The second step is to define the sample framework. In this phase, researchers determine the required number of participants and establish the characteristics that the sample should possess. Additionally, the sample is assessed for homogeneity and interpersonal relationships. It must accurately represent the perspectives of the research population. In this study, the sample consisted of farmers familiar with CSA practices and relevant experts in the Sistan plain. A total of

54 participants—27 experts and 27 farmers—were divided into six separate focus groups.

The third step is to identify facilitators. Unlike interviews or surveys, the focus group method relies on facilitators rather than researchers. Facilitators should possess expertise in group work and have a strong reputation for leading effective discussions. Their role is to encourage participation and prevent a few individuals from dominating the conversation. In this study, agricultural extension agents at the county level served as facilitators and moderators. The fourth step is to recruit the sample. When inviting participants to the research, they must be informed about the time and location of the focus group meeting. Thus, an invitation letter outlining the topic, schedule, and meeting location is sent to participants. In this study, the heads of Agricultural Extension Offices in each county were first informed about the meeting, after which participants were invited.

The fifth step is to develop and pre-test the interview guideline. This guideline, which outlines the research objectives and questions, is prepared for the participants and then distributed to them and the facilitators before the meeting. This ensures that everyone is informed about the process and encourages greater participation. The sixth step is to conduct the focus groups. During this phase, the facilitator guides the discussion using the questions listed in the interview guideline. The facilitator should also focus on facilitating the discussion among the members. In this step, time must be managed carefully, and personal negotiations or side discussions should be avoided to keep the conversation focused. The interviews must be recorded in addition to taking notes throughout the meeting. In this study, each focus group session lasted an average of 2 hours and 20 minutes.

After the focus group sessions are conducted, the collected data must be analyzed and interpreted. In this step, discussions from each meeting should be summarized and examined, paying close attention to words, contexts, relationships, and other subtle aspects of the data. This study employed inductive content analysis, along with coding and the development of classification systems, to process the discussions. Each category was linked to subcategories, and the conception continued. Then, once classification was established, the codes were counted. The final step is reporting. The report must be prepared with care and patience. Additionally, it is recommended that the final report or its summary be shared with individual participants.

## 4. Research Findings

### *4.1. Characteristics of focus group participants*

The results showed that the majority of participating experts (55.6%, or 15 individuals) were male, while the remaining 44.4% (12 experts) were female. All farmers in the focus groups (27 individuals) were male. Regarding age, the experts had an average age of 46.33 years (ranging from 38 to 60 years) and an average of 22 years of work experience (ranging from 12 to 30 years). The farmers' mean age was 55.11 years (ranging from 43 to 71 years), with an average of 32.07 years of farming experience (ranging from 11 to 60 years). All 54 participants—both farmers and experts—were married. In terms of education, 18.5% of the farmers held high school diplomas, 29.6% had associate degrees, 40.7% had bachelor's degrees, and 11.1% had master's degrees. Among the experts, 29.6% held bachelor's degrees, 48.1% had master's degrees, and 22.2% had PhDs. The primary occupation of 59.3% of the farmers was crop farming, while 14.8% were involved in animal farming and 25.9% in horticulture. Regarding land area, farmers had an average of 8.37 hectares of crop land or orchards (ranging from 3 to 16 hectares). The findings on CSA educational course participation revealed that, on average, farmers attended 3.96 courses in the past year, while experts attended 5.37 courses.

### *4.2. Barriers to CSA promotion in rural areas*

Data was analyzed using a coding process consisting of open, axial, and selective coding. First, the recorded discussions were transcribed and carefully examined to extract key concepts (analysis units) during the open coding stage. This process resulted in a set of concepts, characteristics, and subcategories. Next, subcategories were defined based on these extracted concepts, marking the axial coding phase. In the final stage, the main categories were derived by integrating the subcategories, considering their shared concepts—this was the selective coding phase. At this stage, the relationships between categories and subcategories became evident.

Based on the results derived from data coding and classification, the challenges of CSA promotion in the Sistan plain fall into seven broad categories: financial challenges, institutional challenges, knowledge gaps, demographic challenges, market

challenges, technical and infrastructural barriers, and environmental challenges. Each of these categories contains subcategories, referred to as concepts. The findings indicate that financial challenges ranked highest among the barriers to CSA promotion, appearing 199 times in the data and representing the most diverse category. This category consists of six key concepts: inadequacy of government subsidies and support, unequal access to resources, limited availability of financial resources, high initial costs, economic profitability uncertainties, and structural poverty in agriculture. The barrier of inadequate government subsidies and support was the most repeated among financial challenges. The government does not provide sufficient subsidies for the purchase of climate-smart technologies, and most subsidies are not directed toward smallholders or regions experiencing severe crises. In other words, it can be said that subsidy reforms have largely failed. Government investment in CSA projects in Sistan and Baluchistan province remains very limited. The allocated budget is primarily spent on high-priority projects, such as water supply initiatives, rather than the advancement of modern technologies. Additionally, there are no specific regulations incentivizing farmers to adopt modern and smart technologies, such as tax exemptions for those utilizing these innovations. Furthermore, no agricultural cooperatives have been established in the province to financially support climate-smart projects, and there are no collective investment frameworks for innovative farming initiatives.

The second subcategory of financial barriers is unequal access to resources. Most investments are concentrated in central Iran, leaving farmers in deprived regions, such as Sistan and Baluchistan, with a disproportionately small share. Moreover, financial and credit resources are unequally distributed across provinces and regions, with economically disadvantaged areas receiving significantly less support. The situation in rural areas is further complicated by frequent power outages, which reduce the efficiency of power-driven smart systems. High energy costs also hinder the implementation of certain technologies, such as smart water pumps, in financially restricted regions. Additionally, monopolies in technology distribution by agricultural machinery-supplying companies limit farmers' equitable access to climate-smart technologies.

Limited access to financial and credit resources is a significant financial barrier to CSA promotion in Sistan and Baluchistan province. Most smallholders are unable to secure loans due to a lack of financial guarantees, and banks and financial institutions do not offer low-interest loans specifically for climate-smart farmers. Additionally, the absence of effective insurance to compensate for losses from climatic and agricultural risks discourages farmers from investing in new technologies. Another concern is that financial resources and credits intended for agricultural development are often redirected to other sectors or granted to individuals who are not physically present in the Sistan region. In many cases, recipients use their credit for purposes unrelated to agricultural advancement.

The high initial cost of implementing CSA technologies is also a major barrier to the development of this approach in most cases. Equipment such as smart sensors, drones, drip irrigation systems, and smart surveillance systems requires substantial upfront investment, which is unaffordable for many farmers. Beyond the initial cost of purchasing equipment, the maintenance expenses for these technologies pose an additional financial burden. Furthermore, most climate-smart tools are imported, making their prices vulnerable to fluctuations in foreign exchange rates.

The relationship between water scarcity and CSA development barriers in the Sistan plain is both mutual and complex. On one hand, the water crisis, resulting from the violation of Hirmand water rights, groundwater depletion, and inefficiencies in water projects, has significantly impacted agricultural infrastructure, making sustainable development planning increasingly difficult. On the other hand, CSA, as a complementary approach, can enhance farmers' resilience by optimizing water usage, predicting atmospheric patterns, reducing evaporation, efficiently utilizing soil moisture, and adopting drought-compatible cropping patterns. However, implementing these technologies without a minimally sustainable water supply will have limited effectiveness. Therefore, any investment in CSA development must be accompanied by efforts to manage water resources, improve water rights policies, and integrate modern irrigation systems to ensure meaningful returns.

Uncertainty in economic profitability, including the lack of adequate practical evidence

demonstrating the economic benefits of CSA and the absence of clear short-term financial benefits, which naturally discourages farmers from investment in CSA, has significantly slowed the promotion of CSA in Sistan and Baluchistan province.

Finally, structural poverty in agriculture, rooted in farmers' low income and limited land ownership, is the last subcategory within the category of financial barriers. Most farmers in the studied province have low and unstable incomes, restricting their financial capacity to adopt new technologies. In addition, farmers with insufficient or no land may lack the motivation to invest in sustainable agricultural methods. Figure 1 presents additional relevant findings.

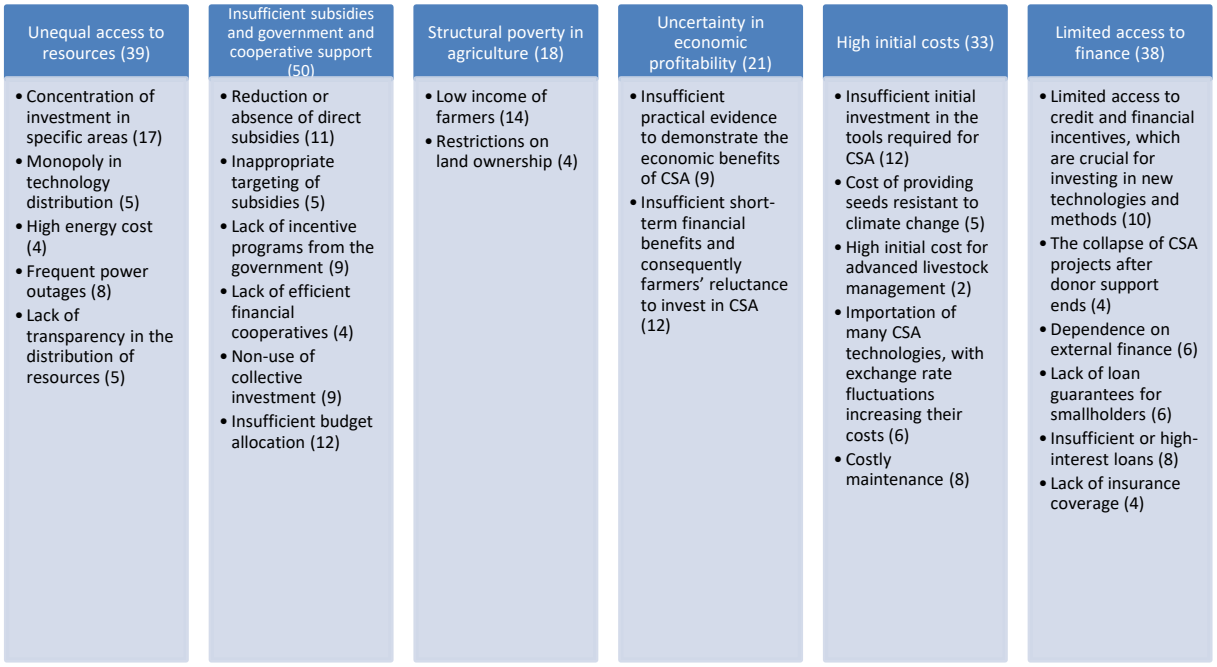


**Figure 1. The financial challenges of CSA promotion in rural areas**

The second category of challenges with the highest frequency (170 repetitions) was institutional barriers. These barriers were composed of four concepts: policy and governance, awareness and capacity-building, institutional support, and poor project monitoring and evaluation. Among institutional barriers, policy and governance emerged as the most frequently mentioned. Currently, there are no clear policies or strategic plans for CSA development at the national or regional levels. In other words, policymakers have yet to formulate a comprehensive and cohesive plan for regions like Sistan and Baluchistan, which are struggling with climatic crises. Existing agricultural policies primarily focus on rich and developed areas, leaving deprived provinces like Sistan and Baluchistan with lower priority. It means that macro-decisions are made in the capital city, limiting the authority of local institutions to create policies and implement localized programs. Policymaking instability and frequent administrative and managerial changes have further disrupted agricultural policies and programs, affecting long-term CSA projects. Additionally, there are no legal obligations to ensure the optimal use of water resources, the adoption of smart irrigation systems, or proper crop monitoring. Sanctions on technology imports have also hindered CSA promotion. Due to economic sanctions, CSA technologies and equipment are either unavailable or imported at prohibitively high prices. Furthermore, the lack of interaction with CSA-leading countries has stifled investment in this field. Another challenge is the absence of strong political commitment and effective transboundary policy frameworks, leading to inconsistent management of shared resources such as water. The region's heavy reliance on the Hirmand River (originating in Afghanistan) and the reduction in water received from Afghanistan are eminent examples of this issue. This challenge stems from Afghanistan's violation of historical

agreements, including the 1972 Hirmand Agreement, which defines Iran's water rights.

Water resource governance and CSA development are two distinct categories that cannot achieve sustainable success without one another. On one hand, efficient management of water resources—particularly securing Hirmand water rights—is a fundamental prerequisite for agricultural planning. On the other hand, given that water scarcity has become a structural crisis, CSA technologies can play a crucial role in increasing the productivity of limited resources, reducing water wastage, and enhancing farmers' adaptability to local climatic conditions. Therefore, effective water governance, coupled with diplomatic efforts to secure water rights, can support the implementation of scientific and technological policies. This approach not only fosters local agricultural independence from water resources but also strengthens resilience against environmental challenges through modern farming methods.

The second most frequently cited subcategory of institutional barriers was awareness and capacity-building. This category encompasses several key issues, including the shortage of technical training centers, neglect of smallholders' rights, lack of experts, inattention to practical training, and disregard for farmer feedback. Smallholders, who constitute the majority of farmers in the province, lack adequate regulatory support. Additionally, they have limited access to training programs focused on smart agricultural technologies. Existing educational and promotional initiatives are predominantly theoretical, often failing to incorporate practical and applied CSA training. Furthermore, the shortage of trained and specialized CSA personnel within local agricultural departments hinders the delivery of effective extension and educational services. Compounding this issue is the absence of structured feedback collection from farmers and agricultural stakeholders, preventing research from evolving in alignment with farmers' needs.

Institutional support, identified as a major barrier, encompassed poor institutional frameworks, insufficient support by the public and private sectors, weak coordination among stakeholders, lack of institutional transparency, and lack of after-sales services. Participants noted that various agencies—including the Ministry of Agriculture, the Ministry of Power, and the Meteorological Organization—lack sufficient coordination in implementing CSA projects. In some cases, the lack of transparency in the administrative process and resource allocation impairs the efficiency of project execution. Additionally, when CSA equipment malfunctions, there are inadequate support centers available to repair or replace it.

Poor project monitoring and evaluation were identified as the final institutional barrier. It was found that Sistan and Baluchistan province lacks an effective system for assessing the performance of CSA projects, preventing the identification and resolution of their shortcomings. Additionally, many government resolutions and projects stall at the implementation phase or remain incomplete due to insufficient monitoring (Figure 2).


**Figure 2. The institutional challenges of CSA promotion in rural areas**

Technical and infrastructural challenges, cited 51 times, represent another set of factors that disrupt CSA development. These challenges are composed of five concepts, including poor research infrastructure, weak water resource management, lack of modern equipment and limited access to technologies, inadequate communication infrastructure, and ineffective collection and monitoring of climatic and agronomic data. Among these barriers, poor research infrastructure had the highest frequency of repetition. Investment in CSA research projects from both the public and private sectors has been extremely limited. Misallocation of budgets has marginalized research efforts, leaving existing research centers in the province underfunded and lacking modern tools and facilities necessary for conducting specialized tests and projects in the field of CSA properly. Moreover, private sector participation in financing research projects remains negligible, forcing most initiatives to rely exclusively on government funding. The lack of collaboration with international universities and research institutions has further hindered the advancement of innovative research in climate-smart and sustainable agriculture. As a result of financial constraints and inadequate facilities, researchers lack the motivation to pursue long-term and practical research. Due to limitations and shortages of facilities, many experts and researchers have left the province to work in better-equipped institutions in other provinces. Additionally, the absence of an effective evaluation system to monitor research activities and assess their success has led to wasted resources and unnecessary duplication of studies.

The second subcategory of technical and infrastructural challenges is the poor management of water resources. Despite the severe water scarcity crisis in the province, advanced irrigation systems, such as smart drip irrigation and automatic soil moisture control, are rarely available to farmers. This issue is further exacerbated by outdated and deteriorating water transfer systems, which increase water wastage and hinder efficient resource management. Additionally, precise data are not collected on water resource status and its application in smart irrigation planning.

The lack of modern equipment and restricted access to advanced technologies further exacerbate technical and infrastructural barriers to CSA. Essential technologies—such as agricultural drones, soil and moisture sensors, and irrigation management systems—are either unavailable or poorly distributed across the region. Since most smart technologies are imported, they are not only expensive but also difficult for local farmers to access. Even when available, the absence of skilled technicians to install and maintain these systems poses an additional challenge. Furthermore, much of the existing agricultural machinery is outdated

and inefficient, making integration with modern technologies impractical.

Inadequate communication infrastructure, a subset of technical and infrastructure-related challenges, disrupts CSA promotion. Many rural and agricultural areas in the province lack access to high-speed internet, despite climate-smart technologies relying heavily on digital communication, such as remotely sensed data analysis and smart irrigation management. Additionally, poor telecommunication and mobile network coverage in certain regions hinders the use of smart tools, e.g., agricultural applications and quick messaging services. Similarly, the installation of smart systems like soil and moisture sensors requires an Internet of Things (IoT) platform, which is unavailable in the area. Moreover, farmers struggle to access essential knowledge and expertise because they lack communication networks that connect them with specialists.

Weaknesses in collecting and monitoring climatic and agronomic data pose a significant technical and infrastructural barrier. Addressing this challenge requires access to advanced meteorological stations, remotely sensed data, local climate prediction software, and natural resource monitoring and management systems. Accurate climatic data is essential for smart agricultural management, yet the province lacks sufficient advanced meteorological stations. In addition, CSA relies on satellite data for soil analysis, crop growth analysis, and resource management, but these data are currently inaccessible to local farmers. Furthermore, precise weather forecasting tools and localized climate change analysis systems have not been developed. The absence of smart monitoring tools for the analysis of water, soil, and air status prevents sound and optimal environmental resource management (Figure 3).

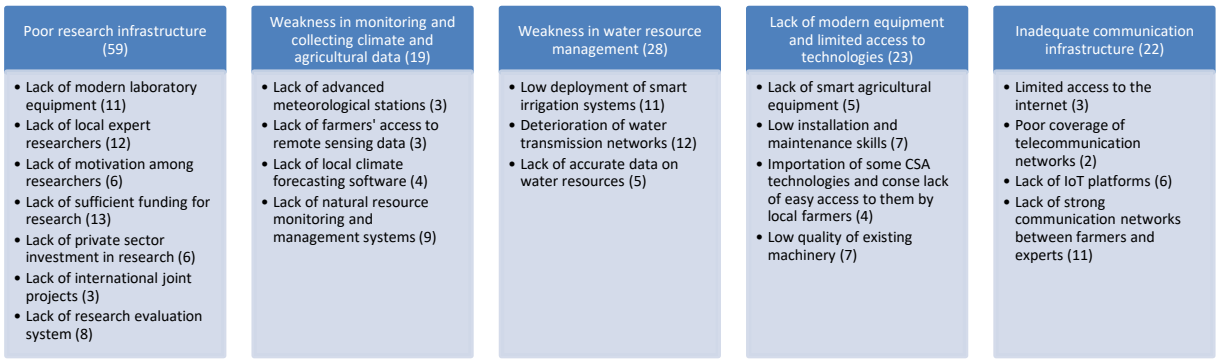


**Figure 3. The technical-infrastructural challenges of CSA promotion in rural areas**

Demographic barriers, cited 99 times, represent another major challenge to CSA promotion in Sistan and Baluchistan province. These barriers stem from the region's distinctive cultural, social, and economic characteristics. This category is divided into four subcategories: culture and community (38 repetitions), awareness and education (31 repetitions), immigration and the loss of farm labor (16 repetitions), and women's limited role in CSA (14 repetitions). Within the culture and community subcategory, many farmers are reluctant to adopt new technologies, perceiving them as high-risk due to their reliance on traditional and well-established farming practices. Fear of failure and the potential for economic loss further discourage farmers from shifting to new methods. Some farmers, however, believe that climate-smart technologies are unnecessary and suited only for more developed areas. Negative past experiences with government programs or new technologies have also weakened trust in the efficiency of climate-smart tools. In some cases, farmers view the adoption of new tools as a threat to their cultural identities, influenced by traditional beliefs and local customs. Additionally, cultural differences among ethnic groups in the region may contribute to varying degrees of resistance to change. The lack of a strong culture of collaboration and teamwork among farmers further limits the sharing of resources, knowledge, and equipment.

Regarding awareness and education, participants acknowledged that a significant number of farmers

lack the basic literacy required to understand and apply new technologies. Even literate farmers may struggle with the complexity of smart technology guidelines. Additionally, many farmers do not perceive education and learning as essential and often choose not to attend training courses or workshops. Furthermore, a large portion of the farming community remains unaware of the benefits of CSA in enhancing productivity and mitigating risks.

Immigration and the loss of farm labor are additional demographic barriers to CSA promotion. The region faces a shortage of skilled labor capable of managing and utilizing climate-smart technologies. However, due to limited job opportunities and low farming incomes, young workers often migrate to urban areas, leaving behind an older population that is generally less receptive to adopting new technologies.

The participants also highlighted the limited role of women in CSA. In some regions, sociocultural beliefs restrict women's involvement in agriculture and decision-making related to farming. Additionally, many women are employed in agricultural jobs that offer little to no wages, discouraging them from learning new technologies. Furthermore, female farmers and members of farming households often lack access to CSA-related education (Figure 4).

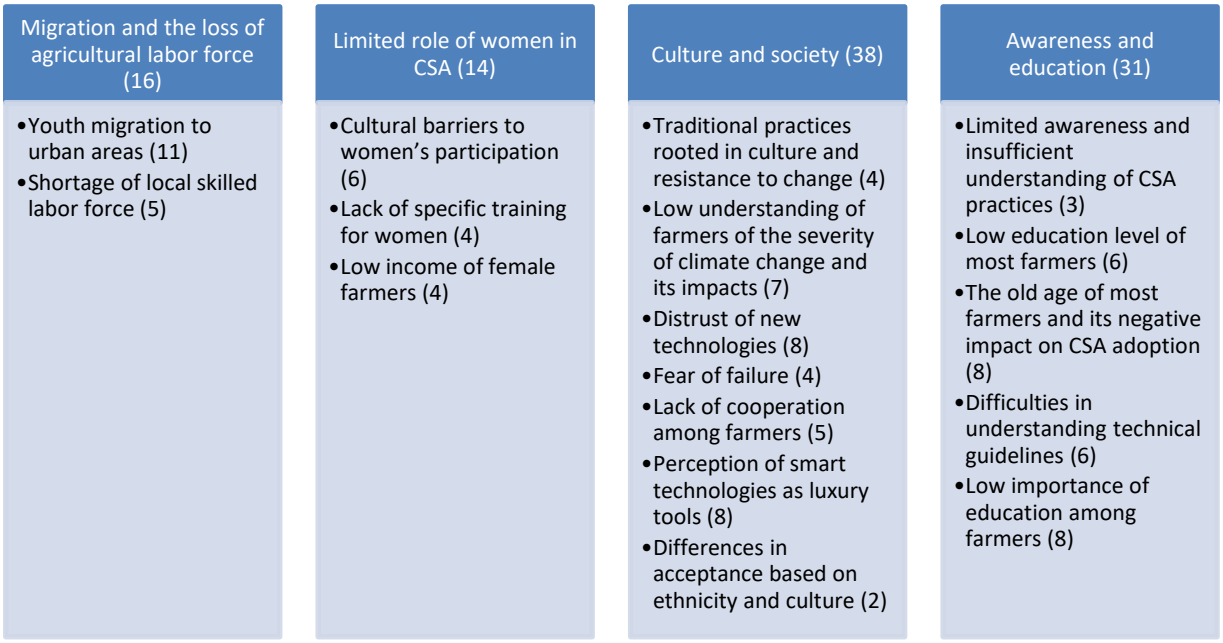


**Figure 4. The demographic challenges of CSA promotion in rural areas**

Environmental challenges, cited 88 times, pose another set of significant obstacles to CSA promotion in Sistan and Baluchistan province. The region's unique climatic and environmental conditions complicate CSA development, negatively impacting natural resources and farming practices. These barriers reduce productivity and discourage farmers from adopting new technologies. Environmental challenges are categorized into four main areas: environmental pollution, extreme climatic changes, water scarcity and crisis, and soil erosion and land degradation. Due to limited awareness and a lack of alternative technologies, farmers frequently overuse chemical fertilizers and pesticides, leading to soil and water pollution and diminishing agricultural productivity. Additionally, dust storms not only damage crops but also reduce sunlight exposure, disrupting the photosynthesis process and further harming plant growth.

The withdrawal of water rights by Afghanistan, coupled with extreme climate change in recent years, has severely impacted all farming activities and plans in the region. Consecutive droughts—particularly in the north of the province (the Sistan plain)—have led to the drying of critical water sources, including the Hirmand River and Hamoun wetlands, drastically reducing water availability for

farm irrigation. As a result, not only has the adoption of CSA technologies become increasingly difficult, but farming itself has, in many cases, become unfeasible. In addition to the decline in rainfall in Afghanistan and the political decisions affecting agricultural planning in the Sistan plain, irrigation and cropping plans also suffer from irregular and short-term rainfalls. Climate-smart technologies require precise environmental predictions, yet the lack of consistent and sustainable rainfall complicates their effective implementation. Additionally, Sistan and Baluchistan province has experienced rising temperatures in recent years, accelerating surface water evaporation and depleting soil moisture. This has severely diminished crop productivity and further heightened the need for smart water transfer systems and improved water resource management.

Water scarcity and crisis, a subset of environmental challenges, have further slowed the promotion of CSA. Over-extraction of groundwater in recent years has significantly depleted water levels, threatening non-renewable water resources. In many areas, farmers rely on saline and brackish water for irrigation, which diminishes crop yields and degrades soil quality. Additionally, the drying of the Hamoun Wetland—one of the region's critical water sources—has created a serious crisis for the agricultural water supply. Environmental changes have also led to the decline of local drought-resistant plant species, despite their crucial role in CSA. Climate change and environmental degradation have further reduced biodiversity in the region, negatively impacting the agricultural ecosystem.

Sistan and Baluchistan province is a major center for dust storms and wind erosion in Iran, which severely depletes its land quality. Desertification—driven by droughts, soil erosion, and vegetation degradation—poses a fundamental barrier to climate-smart and sustainable agricultural development. Long-term severe winds, such as the 120-day winds, displace soil and strip it of fertility. Additionally, mineral accumulation from irrigating with saline water, coupled with the absence of smart irrigation management systems, has led to soil salinization and declining crop yields. Overgrazing and unauthorized exploitation of forests and pastures have further degraded vegetation cover, endangering the region's environmental sustainability. Furthermore, the lack of smart programs for pasture management and optimal land use has contributed to increased soil erosion and accelerated desertification (Figure 5).

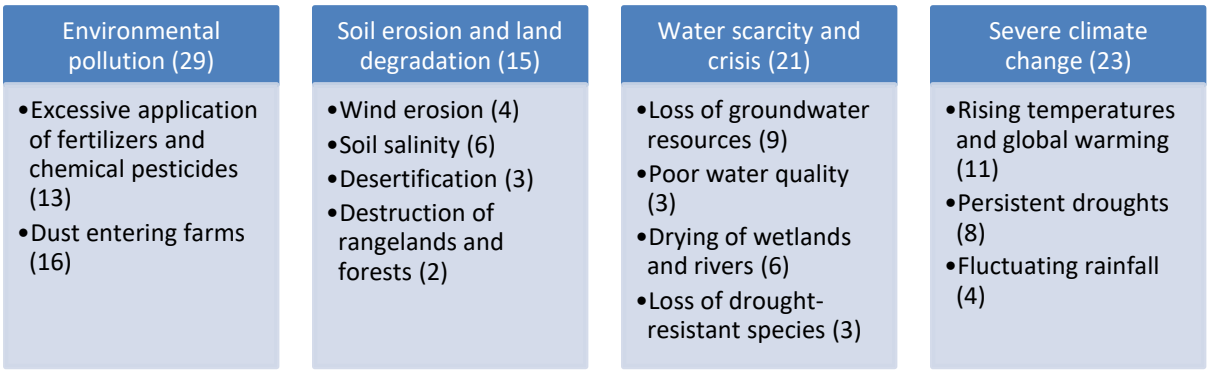


**Figure 5. The environmental challenges of CSA promotion in rural areas**

Another significant barrier to CSA promotion is knowledge gaps, cited 64 times. The lack of pilot projects to demonstrate the effectiveness of climate-smart technologies undermines farmers' trust in these methods. Additionally, there is insufficient funding for scientific research and technologies specifically adapted to Sistan and Baluchistan's climatic conditions. In other words, research and development receive inadequate attention. The absence of strong communication channels between researchers and farmers further complicates the advancement of CSA measures. Scientific findings are not effectively translated into practice due to weaknesses in the agricultural extension system and the lack of a reliable mechanism for transferring research outcomes to

farmers. Moreover, some CSA methods require high levels of technical expertise and management (Figure 6).

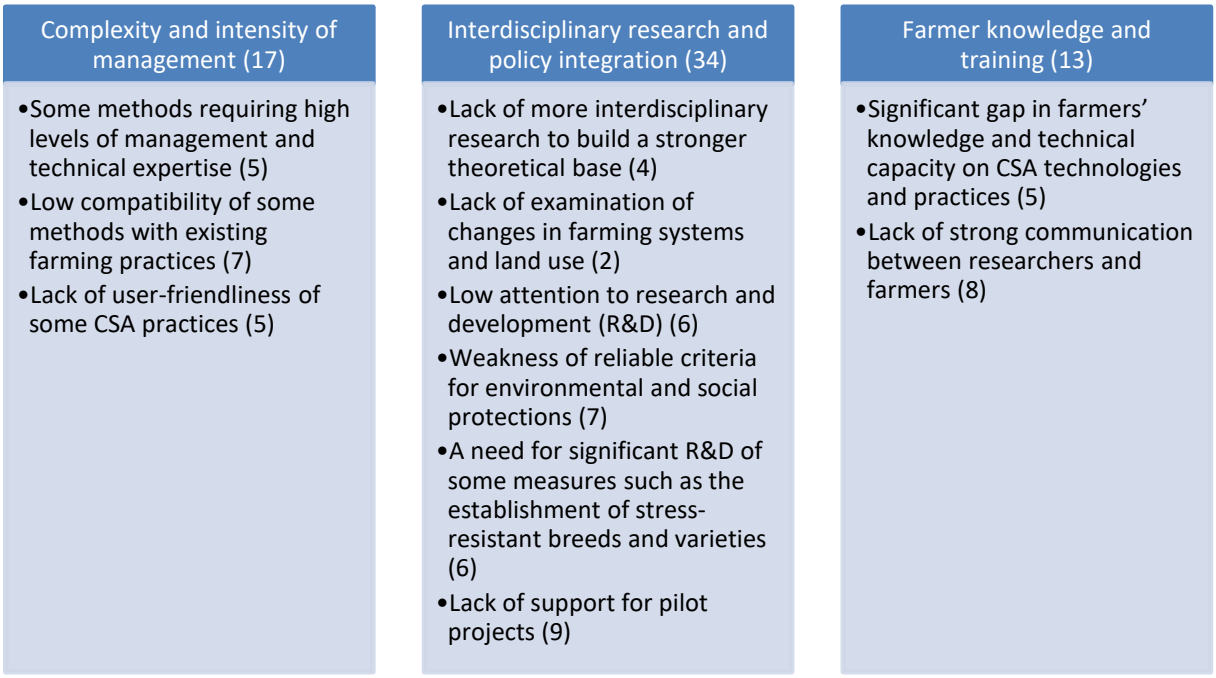


**Figure 6. The knowledge gaps in CSA promotion in rural areas**

The final category of CSA promotion challenges in Sistan and Baluchistan province consists of market barriers, cited 37 times. These barriers include crop price fluctuations and the absence of a well-developed value chain. Instability in crop prices discourages farmers from investing in new methods, as the investment return is not guaranteed. Rapid shifts in market demand—especially for climate-smart crops—can further reduce farmers' motivation to adopt new technologies. A weak value chain in the region presents another major obstacle. Deficiencies in crop processing, packaging, and marketing lower farmers' income, thereby limiting their ability to invest in smart technologies. Additionally, the lack of farmers' direct connection with local, national, or international markets, along with the absence of digital platforms for selling crops, poses long-term challenges to CSA promotion (Figure 7).

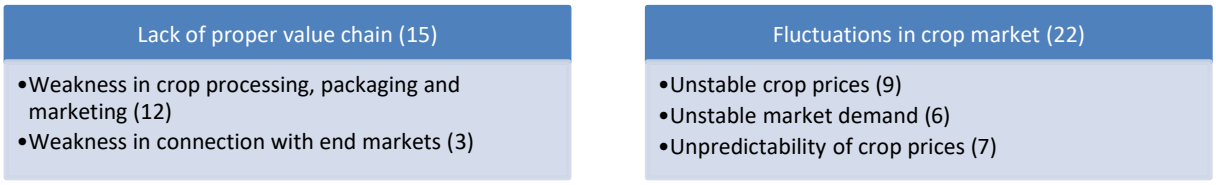


**Figure 7. The market challenges of CSA promotion in rural areas**

## 5. Discussion and Conclusion

The results of the present study, which were derived from a systematic and thorough analysis of CSA promotion challenges in rural areas of the Sistan plain, revealed the complexity and multiplicity of barriers to implementing CSA practices. These barriers were divided into seven categories: financial, institutional, technical, infrastructural, demographic, environmental, and market barriers, as well as knowledge gaps. Financial issues emerged as the most frequently cited obstacles, including high initial costs, limited access to credit sources, and insufficient governmental support. Smallholders, who constitute a significant portion of agricultural producers in the Sistan plain, struggle to invest in

CSA technologies due to a lack of financial support and targeted subsidies. These findings align with those reported by Bhatnagar et al. (2024), Ogunyiola et al. (2022), Mungai et al. (2021), and Hussein (2024), all of whom identified financial constraints and high equipment costs as key barriers to CSA adoption. Additionally, uncertainty in economic profitability is another obstacle that has challenged the adoption of these technologies. Many farmers hesitate to invest in CSA technologies due to the lack of practical evidence demonstrating their financial benefits. This concern was also emphasized in research by Baffour-Ata et al. (2023).

Poor policymaking and the lack of institutional support are other essential impediments to CSA promotion. The absence of coherent and stable policies for deprived regions like the Sistan plain, along with governmental instability in decision-making, has slowed the development of these technologies. Similar findings have been reported by El-Chami et al. (2020), Lupogo and Mkuna (2023), Safdar et al. (2024), and Gemtou et al. (2024), all of whom emphasize the critical role of sustainable governance and policymaking on the development of agricultural technologies. Additionally, the shortage of extension training courses and skilled human resources was found as another institutional barrier. Farmers often lack access to practical CSA training, which not only limits their awareness but also diminishes their motivation to adopt new technologies.

The results indicate that weaknesses in knowledge transfer and the absence of pilot projects have hindered farmers' trust in adopting climate-smart technologies. Similarly, File and Nhamo (2023) and Murugesan (2024) have noted the importance of educational and pilot programs to demonstrate the effectiveness of CSA. The lack of collaboration between researchers and farmers and the absence of effective knowledge-transfer systems further exacerbate this gap.

Poor communication infrastructure, the unavailability of modern equipment, and the lack of precise climatic and agronomic data are additional critical challenges identified in this research. Since CSA relies heavily on advanced technologies and climate data monitoring systems, their scarcity in the Sistan plain significantly hinders its implementation. This finding supports the reports of Hussein (2024), Gemtou et al. (2024), and Mabhaudhi et al. (2025) regarding the need for developing robust technical and communication infrastructure to support the promotion of sustainable agriculture.

Harsh climatic conditions in the Sistan plain, including frequent droughts and severe winds, have created substantial environmental challenges, restricting farmers' ability to effectively utilize climate-smart technologies. Extreme climate fluctuations not only reduce agricultural productivity but also intensify the need for advanced systems to manage water and soil resources. These results are consistent with those reported by Komba and Muchapondwa (2018), Mehta et al. (2022), Zhao et al. (2023), and Oteng and Egbendewe (2024).

Farmers' low literacy and awareness in the Sistan plain, combined with their older age and the migration of young workers, have significantly hindered the adoption of new technologies. These findings corroborate the reports of Kom et al. (2022), Naveen et al. (2024), and Bhatnagar et al. (2024), which emphasize the influence of educational level and demographic characteristics on the adoption of climate-smart technologies. Additionally, the restricted role of women in CSA due to sociocultural barriers presents another challenge identified in this research.

Crop price fluctuations and the absence of a well-developed value chain are other obstacles detected in this research. These challenges discourage farmers from investing in new technologies and limit their access to consumption markets. Similar findings have been reported by George and Rwegasira (2017), Makkar et al. (2023), and Gemtou et al. (2024), who emphasize the importance of market stability in facilitating CSA expansion.

According to the results, policymakers should take measures to cope with these challenges, considering the local conditions in the Sistan plain, provide integrated approaches for infrastructure development, provide practical training, create sustainable financial and institutional support systems, and, most critically, strengthen political diplomacy to reclaim the Hirmand River water rights from Afghanistan. Investing in communication infrastructure and advanced technologies, enhancing cooperation among stakeholders, and developing crop value chains will further contribute to advancing CSA adoption. These measures will not only improve agricultural productivity but also play a crucial role in

promoting sustainable development and reducing vulnerability to climate change.

The improvement of CSA adoption depends on implementing pragmatic solutions. Providing operational training to farmers and experts, with a focus on modern technologies and resource productivity, can be instrumental in building trust and motivation. Establishing local centers to offer consulting services, necessary equipment, and technical support is another essential measure. In addition, pilot projects at the village level and across other regions of the Sistan plain can be used to effectively demonstrate the tangible benefits of CSA. These initiatives can pave the way for expanding modern technologies by presenting real-world results and fostering greater farmer engagement. Strengthening communication networks, including access to the Internet and digital services, can further support farmers in using new information and data.

From a policymaking perspective, it is imperative to develop national strategies for CSA development. These strategies should incorporate financial incentives, targeted subsidies, and accessible credit facilities for smallholders. Furthermore, policies must be established to strengthen collaboration among the public sector, private sector, and educational institutions. Enacting supportive regulations for natural resource management, encouraging the use of modern technologies, and minimizing bureaucratic obstacles are other critical measures. The government must play a central role in achieving sustainable development goals by allocating sufficient funds for CSA-related research and development, as well as enhancing economic diplomacy to attract foreign investment. Focusing on deprived regions and leveraging local potential in policymaking can significantly improve the effectiveness of these initiatives.

## Acknowledgement

This research project was financially supported under code PR-UOZ1403-5 by the Deputy of Research and Technology at University of Zabol. The authors extend their sincere appreciation to the Deputy for both financial assistance and moral support.

### Authors′ contributions

The authors equally contributed to the preparation of this article.

### Conflict of interest

The authors declare no conflict of interest.

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*Journal of Research and Rural Planning*
Volume 13, No. 4, Autumn 2024, Serial No. 47, Pp. 97-116
**eISSN: 2783-2007** **ISSN: 2783-2791**
http://jrrp.um.ac.ir

**Original Article**

# تحلیل موانع و چالش‌های ترویج کشاورزی اقلیم هوشمند در مناطق روستایی دشت سیستان: یک رویکرد کیفی

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## چکیده مبسوط

### ۱. مقدمه

کشاورزی اقلیم هوشمند به‌عنوان یکی از راهبردهای کلیدی برای مقابله با اثرات تغییرات اقلیمی در بخش کشاورزی معرفی شده است. این رویکرد با تمرکز بر افزایش بهره‌وری، سازگاری با تغییرات اقلیمی و کاهش انتشار گازهای گلخانه‌ای، می‌تواند نقشی حیاتی در تأمین امنیت غذایی و پایداری کشاورزی در مناطق روستایی ایفا کند. در مناطق خشک و نیمه‌خشک مانند دشت سیستان، تغییرات اقلیمی اثرات شدیدی بر منابع آبی، کیفیت خاک و معیشت کشاورزان داشته و ضرورت استفاده از فناوری‌های اقلیم هوشمند را دوچندان کرده است. با این حال، ترویج و پذیرش این رویکرد در چنین مناطقی با چالش‌ها و موانع متعددی مواجه است که نیازمند شناسایی و تحلیل دقیق است. بنابراین، پژوهش حاضر با هدف شناسایی این موانع و ارائه راهکارهای عملی برای بهبود پذیرش کشاورزی اقلیم هوشمند انجام شده است. هدف اصلی این پژوهش، شناسایی و تحلیل چالش‌ها و موانع ترویج کشاورزی اقلیم هوشمند در مناطق روستایی دشت سیستان بوده است. کشاورزی اقلیم هوشمند به‌عنوان یک رویکرد پایدار و جامع، ظرفیت بالقوه‌ای برای مقابله با اثرات تغییرات اقلیمی و بهبود بهره‌وری کشاورزی در مناطق خشک و نیمه‌خشک دارد. با این حال، این پژوهش بر آن است تا با شناسایی موانع و چالش‌های موجود، راهکارهایی موثر برای افزایش پذیرش و کاربرد این روش‌ها توسط کشاورزان و سیاست‌گذاران ارائه دهد. اهمیت این موضوع در شرایطی که مناطق روستایی دشت سیستان به دلیل اقلیم سخت و زیرساخت‌های محدود به شدت آسیب‌پذیر هستند، دوچندان می‌شود.

### ۲. مبانی نظری تحقیق

مبانی نظری این پژوهش بر اصول و مفاهیم کشاورزی اقلیم هوشمند استوار است. کشاورزی اقلیم هوشمند به عنوان رویکردی سه‌گانه مطرح شده است که شامل افزایش بهره‌وری، کاهش آسیب‌پذیری در برابر تغییرات اقلیمی و کاهش انتشار گازهای گلخانه‌ای می‌باشد. اگرچه کشاورزی اقلیم هوشمند بر اساس دانش کشاورزی موجود، فن‌آوری‌ها و اصول پایداری ساخته شده است، اما این نوع نظام از چندین جهت متمایز است: اول، تمرکز صریح بر پرداختن به تغییرات اقلیمی در سیستم کشاورزی است. دوم، کشاورزی اقلیم هوشمند به طور سیستماتیک هم‌افزایی و مبادله‌ای را که بین بهره‌وری، سازگاری و کاهش اثرات وجود دارد، در نظر می‌گیرد و سوم، کشاورزی اقلیم هوشمند شامل طیف وسیعی از شیوه‌ها و فن‌آوری‌هایی است که برای شرایط خاص زراعی-اکولوژیکی و زمینه‌های اجتماعی- اقتصادی از جمله اتخاذ گونه‌های گیاهی مقاوم در برابر آب و هوا، تکنیک‌های کشاورزی حفاظتی، جنگل-زراعی، کشاورزی دقیق، استراتژی‌های مدیریت آب و بهبود مدیریت دام ترویج یافته‌اند.

### ۳. روش تحقیق

این پژوهش از رویکرد کیفی برای شناسایی موانع و چالش‌های ترویج کشاورزی اقلیم هوشمند بهره گرفته است. داده‌ها از طریق تکنیک گروه متمرکز از ۵۴ مشارکت‌کننده شامل کشاورزان و کارشناسان جمع‌آوری شد. این مشارکت‌کنندگان به صورت هدفمند انتخاب شدند تا نماینده بخش‌های مختلف جامعه کشاورزی و نهادهای مرتبط باشند. برای تحلیل داده‌ها، از روش تحلیل محتوای استقرایی استفاده شد که شامل مراحل کدگذاری باز، محوری و انتخابی می‌باشد. این روش امکان شناسایی مقوله‌های اصلی و زیرمقوله‌های مرتبط با چالش‌ها و موانع ترویج کشاورزی اقلیم هوشمند را فراهم کرد. ابزارهای مورد استفاده شامل ضبط گفتگوها، یادداشت‌برداری دقیق، و تحلیل سیستماتیک داده‌ها بود.

### ۴. یافته‌های تحقیق

تحلیل داده‌های به‌دست‌آمده نشان داد که چالش‌های ترویج کشاورزی اقلیم هوشمند در دشت سیستان در هفت دسته اصلی شامل

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چالش‌های مالی، نهادی، فنی و زیرساختی، شکاف‌های دانشی، جمعیت‌شناختی، محیط‌زیستی و بازار دسته‌بندی می‌شوند. از میان این چالش‌ها، موانع مالی و نهادی بیشترین تأثیر را بر کندی پذیرش این رویکرد داشته‌اند. هزینه‌های اولیه بالا برای تهیه فناوری‌های اقلیم هوشمند، کمبود منابع اعتباری و حمایت‌های مالی محدود از سوی دولت، از مهم‌ترین موانع مالی شناسایی‌شده بودند. کشاورزان خرد، که بخش عمده‌ای از تولید کشاورزی در این منطقه را به خود اختصاص می‌دهند، به دلیل نبود یارانه‌های هدفمند و دسترسی نابرابر به منابع مالی، قادر به سرمایه‌گذاری در فناوری‌های نوین نیستند. کمبود سیاست‌های مشخص و برنامه‌های راهبردی برای حمایت از کشاورزی اقلیم هوشمند در سطح ملی و منطقه‌ای از دیگر موانع شناسایی‌شده بود. سیاست‌های موجود بیشتر بر مناطق برخوردار متمرکز بوده و استان‌های محرومی مانند سیستان و بلوچستان از اولویت کمتری برخوردار هستند. ضعف در آموزش‌های کاربردی و نبود نیروی انسانی متخصص نیز بر شدت این چالش‌ها افزوده است. نبود تجهیزات مدرن، ضعف زیرساخت‌های ارتباطی و فنی، و محدودیت در دسترسی به فناوری‌های نوین از دیگر موانع مهم بودند. بسیاری از فناوری‌های اقلیم هوشمند نیازمند دسترسی به اینترنت پرسرعت و ابزارهای پیشرفته هستند که در این منطقه به‌طور قابل‌توجهی محدود است. کمبود پروژه‌های پایلوت و آزمایشی برای نمایش کارایی فناوری‌های اقلیم هوشمند و نبود سیستم‌های مؤثر انتقال دانش از محققان به کشاورزان، مانع اعتمادسازی و افزایش آگاهی کشاورزان شده است. بسیاری از کشاورزان از مزایای این فناوری‌ها آگاهی کافی ندارند. ویژگی‌های جمعیت‌شناختی، از جمله سطح پایین سواد کشاورزان، سن بالا و مهاجرت نیروی کار جوان، از موانع مهم در پذیرش فناوری‌های نوین بودند.

## ۵. بحث و نتیجه‌گیری

نشان داد که این منطقه با طیف گسترده‌ای از محدودیت‌های ساختاری، اجتماعی و اقتصادی مواجه است. برای بهبود پذیرش کشاورزی اقلیم هوشمند، باید به اجرای راهکارهای عملی پرداخته شود. آموزش‌های عملیاتی برای کشاورزان و کارشناسان با تمرکز بر فناوری‌های نوین و بهره‌وری منابع، می‌تواند اعتمادسازی و انگیزه‌سازی کند. ایجاد مراکز محلی برای ارائه خدمات مشاوره‌ای، تأمین تجهیزات مورد نیاز، و پشتیبانی‌های فنی نیز از اقدامات ضروری است. همچنین، ایجاد پروژه‌های پایلوت در سطح روستاها و مناطق مختلف دشت سیستان، می‌تواند نشان‌دهنده مزایای واقعی کشاورزی اقلیم هوشمند باشد. از منظر سیاست‌گذاری، تدوین استراتژی‌های ملی برای توسعه کشاورزی اقلیم هوشمند ضروری است. این استراتژی‌ها باید شامل مشوق‌های مالی، مانند یارانه‌های هدفمند، و تسهیلات اعتباری برای کشاورزان خرد باشد. همچنین، باید سیاست‌هایی برای تقویت همکاری میان بخش‌های دولتی، خصوصی و نهادهای آموزشی تدوین شود. ایجاد قوانین حمایتی برای مدیریت منابع طبیعی، تشویق به استفاده از فناوری‌های نوین، و کاهش موانع بروکراتیک از دیگر اقدامات کلیدی است. دولت باید با اختصاص بودجه‌های کافی به تحقیق و توسعه در حوزه کشاورزی اقلیم هوشمند، و تقویت دیپلماسی اقتصادی برای جذب سرمایه‌گذاری خارجی، نقش مهمی در تحقق اهداف توسعه پایدار ایفا کند. تمرکز بر مناطق محروم و استفاده از ظرفیت‌های بومی در سیاست‌گذاری‌ها، می‌تواند اثربخشی برنامه‌ها را افزایش دهد.

**کلیدواژه‌ها:** کشاورزی اقلیم هوشمند، بهره‌وری کشاورزی، تاب-آوری کشاورزان، توسعه روستایی، دشت سیستان.

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**How to cite this article:**
Karimi, H., Ataei, P., & Pariab, J. (2024). Analysis of Challenges and Barriers to Promoting Climate-Smart Agriculture in Rural Areas of the Sistan Plain: A Qualitative Approach. *Journal of Research & Rural Planning, 13*(4), 97-116.
http://dx.doi.org/10.22067/jrrp.v13i4.2501-1120

**Date:**
*Received: 07-02-2025*
*Revised: 07-04-2025*
*Accepted: 27-05- 2025*
*Available Online: 27-05-2025*

# فهرست مندرجات

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۹. ۳. انواع نقل قول‌ها (مستقیم و غیر مستقیم)، نقل به مضمون و مطالب به دست آمده از منابع و مآخذ، با حروف نازک و استفاده از نشانه‌گذاری‌های مرسوم، مشخص شود و نام صاحبان آثار، تاریخ و شماره صفحات منابع و مآخذ، بلافاصله در میان پرانتز نوشته شود.

۱۰. مقالات برگرفته از رساله و پایان‌نامه دانشجویان با نام استاد راهنما، مشاوران و دانشجو به صورت توأمان و با مسؤولیت استاد راهنما منتشر می‌شود.

۱۱ . چنانچه مخارج تحقیق یا تهیه مقاله توسط مؤسسه‌ای تأمین مالی شده باشد، باید در بخش تشکر و قدردانی مشخص گردد.

۱۲ . شیوه ارزیابی مقالات: مقالات ارسالی که شرایط پذیرش را احراز کنند، برای داوران خبره در آن موضوع ارسال می‌شوند. داوران محترم، جدای از ارزشیابی کیفی مقالات، راهبردهای سازنده‌ای پیشنهاد می‌کنند. پیشنهادهای داوران محترم به طور کامل، اما بدون نام و نشان داور، برای نویسنده مقاله ارسال خواهد شد.

۱۳ . مجله حق رد یا قبول و نیز ویراستاری مقالات را برای خود محفوظ می‌دارد و مقالات مسترد نمی‌گردد. اصل مقالات رد یا انصراف داده شده پس از سه ماه از مجموعه آرشیو مجله خارج خواهد شد و مجله پژوهش و برنامه‌ریزی روستایی هیچ مسئولیتی در این ارتباط نخواهد داشت.

۱۴ . مسؤولیت ارائه صحیح مطالب مقاله بر عهده‌ی نویسندگان مقاله است. از این‌رو، نسخه‌ای از مقاله آماده چاپ برای انجام آخرین تصحیحات احتمالی به نشانی الکترونیکی نویسنده ارسال خواهد شد. چنانچه ظرف مدت یک هفته پاسخی از سوی نویسندگان واصل نگردید به معنای موافقت آنها با اصلاحات انجام شده تلقی و نسبت به چاپ آن اقدام می‌شود.

۱۵. دریافت مقاله صرفاً از طریق سامانه مجله (http://jrrp.um.ac.ir) خواهد بود و مجله از پذیرش مقالات دستی یا پستی معذور خواهد بود.

۱۶. نویسندگان گرامی، مقالاتی که مطابق فرمت مجله تهیه نشده باشند به نویسنده بازگردانده شده و در فرآیند ارزیابی قرار نخواهد گرفت.

۱۷. فایل های ضروری برای ارسال از طریق سامانه عبارتند از:

الف) فایل مشخصات نویسندگان: در محیط word شامل اسامی و مشخصات نویسندگان به فارسی و انگلیسی.

ب) فایل اصلی مقاله بدون مشخصات: در محیط word شامل متن اصلی مقاله بدون اسامی و مشخصات نویسندگان.

ج) فایل چکیده مبسوط (مکمل) مقاله: شامل چکیده مبسوط فارسی در قالب یک فایل در محیط Word.

۱۸. شرایط جزئی تر و دقیق تر نیز در فایل راهنمای نگارش و ارسال مقاله توسط نویسندگان ارائه شده است.

۱۹. مقاله پس از ارزیابی علمی به زبان انگلیسی برگردانده شده و نویسنده(گان) موظف به ترجمه آن در مراکز ویراستاری معتبر خواهند بود و تا قبل از انجام ترجمه، امکان ارسال گواهی پذیرش مقدور نمی‌باشد. لذا پیشنهاد می‌شود فارسی زبانان مقاله خود را به زبان فارسی تهیه و ارسال نموده و پس از طی فرایند ارزیابی علمی و پذیرش نسبت به ترجمه آن اقدام شود.

آدرس پستی: مشهد- میدان آزادی- پردیس دانشگاه فردوسی مشهد- دانشکده ادبیات و علوم انسانی- دفتر مجلهٔ پژوهش و برنامه‌ریزی روستایی.

کد پستی: ۹۱۷۷۹۴۸۸۸۳ تلفن و نمابر: ۰۵۱-۳۸۷۹۶۸۴۰ پست الکترونیکی Rplanning@um.ac.ir

وب سایت: http://jrrp.um.ac.ir/

**فرم اشتراک** (یک ساله/ دوشماره) **مجلهٔ پژوهش و برنامه‌ریزی روستایی**

این جانب ..... شغل ..... با ارسال فیش بانکی به مبلغ ..... ریال به حساب جاری شماره **۴۲۵۲۹۹۶۳۸** بانک تجارت شعبه دانشگاه مشهد کد ۴۲۵۰ به نام عواید اختصاصی دانشکده ادبیات و علوم انسانی، متقاضی اشتراک فصلنامه از شماره .....هستم. چنانچه صاحبان مقالات منتشر شده متقاضی دریافت مجلّه و تیراژه‌ی آن از طریق پست پیشتاز باشند، باید هزینه‌ی آن را به شماره حساب مذکور واریز و اصل فیش پرداختی را به نشانی دفتر مجلّه ارسال کنند.

نشانی: ..... کدپستی: .....

# شرایط پذیرش مقاله

برای سرعت بخشیدن به امر داوری و چاپ مقالات، از همهٔ پژوهشگرانی که مایل به چاپ مقالات علمی خود در این نشریه هستند، درخواست می‌شود به نکات زیر توجه کافی داشته باشند:

۱ . مقالهٔ ارسال شده نباید قبلاً در هیچ نشریهٔ داخلی یا خارجی چاپ شده باشد. هیئت تحریریه انتظار دارد نویسندگان محترم تا هنگامی‌که جواب پذیرش از نشریه نرسیده است، مقالهٔ خود را به مجلهٔ دیگری برای چاپ ارسال نفرمایند.

۲ . مقالات انگلیسی با قلم نازک Times New Roman11 با نرم افزار Word تهیه شود. مقالات، روی کاغذ A4 (با حاشیه از بالا ۳ و پایین ۲ و راست ۲ و چپ ۲ سانتی‌متر) تایپ شود. متن به صورت دو ستونی با رعایت فاصله ۱ سانتی‌متر بین دو ستون و فواصل بین خطوط به صورت single باشد. ۳ . حجم مقاله نباید ازحدود ۹۵۰۰ کلمه و یا حداکثر ۱۵ صفحهٔ چاپی به قطع نشریه بیشتر باشد (با در نظر گرفتن محل جداول، اشکال، خلاصه فارسی و فهرست منابع).

۴ . عنوان مقاله با در نظرگرفتن فواصل بین کلمات نباید از ۶۰ حرف تجاوز کند و با قلم Times New Roman14 سیاه تایپ شود.

۵ . نام نویسندهٔ مقاله با قلم سیاه Times New Roman10 عنوان علمی یا شغلی او با قلم Times New Roman10 در زیر عنوان مقاله ذکر شود. ضمناً آدرس الکترونیکی و شماره تلفن نویسندهٔ مسؤول در پاورقی آورده شود.

۶ . چکیدهٔ مقاله ساختاریافته با قلم نازک Times New Roman 11 به صورت تک ستونی باشد.

۷ . شکل‌ها و نمودارهای مقاله حتماً اصل و دارای کیفیت مطلوب باشد. فایل اصلی اشکال (تحت PDF، Word،Excel) و با دقت ۳۰۰ dpi ارائه شود. اندازهٔ قلم‌ها خصوصاً در مورد منحنی‌ها (legend ) به گونه‌ای انتخاب شوند که پس از کوچک‌شدن مقیاس شکل برای چاپ نیز خوانا باشند.

۸ . ساختار مقاله شامل عناصر زیر است:

۸. ۱ صفحهٔ عنوان: در صفحهٔ شناسنامه باید عنوان مقاله، نام و نام خانوادگی نویسنده (نویسندگان)، درجهٔ علمی، نشانی دقیق (کد پستی، تلفن، دورنگار و پست الکترونیکی)، محل انجام پژوهش، مسؤول مقاله و تاریخ ارسال) درج شود. عهده‌دار مکاتبات باید با علامت ستاره مشخص شود.

۸. ۲ چکیده: شامل چکیده‌های فارسی ساختار یافته (شامل هدف؛ روش؛ یافته‌ها؛ محدودیت‌ها؛ راهکارهای عملی؛ اصالت و ارزش و واژگان کلیدی (۳ تا ۶ کلمه)) است. تا حد امکان چکیدهٔ مقاله از ۳۰۰ کلمه تجاوز نکند . علاوه بر چکیده ساختار یافته، لازم است چکیدهٔ مبسوط فارسی بین ۷۵۰ تا ۱۰۰۰ کلمه نیز حاوی مقدمه، مبانی نظری، روش، نتایج و بحث، نتیجه‌گیری و کلیدواژه‌های مقاله تهیه شود، به طوری که حاوی اطلاعاتی از کل مقاله باشد و بتوان جداگانه آن را چاپ کرد. با توجه به این که مقاله بعدا به صورت کامل به انگلیسی برگردانده خواهد شد، نیازی به ترجمه چکیده مبسوط به انگلیسی نیست.

۸. ۳ مقدمه: شامل ۱- طرح مسئله؛ ۲- اهمیت و ضرورت؛ ۳- اهداف و سوالات اصلی تحقیق.

۸. ۴ ادبیات نظری تحقیق: شامل ۱- تعاریف و مفاهیم؛ ۲- دیدگاه‌ها و مبانی نظری؛ ۳- پیشینه نظری تحقیق و ... .

۸. ۵ روش‌شناسی تحقیق: در برگیرندهٔ ۱- محدوده و قلمرو پژوهش؛ ۲- روش تحقیق و مراحل آن (روش تحقیق، جامعهٔ آماری، روش نمونه‌گیری، حجم نمونه و روش تعیین آن، ابزار گردآوری داده‌ها و اعتبارسنجی آن‌ها)؛ ۳- سؤال‌ها و فرضیه‌ها؛ ۴- معرفی متغیرها و شاخص‌ها؛ ۵- کاربرد روش‌ها و فنون.

۸. ۶ یافته‌های تحقیق: ارائهٔ نتایج دقیق یافته‌های مهم با رعایت اصول علمی و با استفاده از جداول و نمودارهای لازم.

۸. ۷ بحث و نتیجه‌گیری: شامل آثار و اهمیت یافته‌های پژوهش و یافته‌های پژوهش‌های مشابه دیگر با تأکید بر مغایرت‌ها و علل آن، توضیح قابلیت تعمیم‌پذیری و کاربرد علمی یافته‌ها و ارائهٔ رهنمودهای لازم برای ادامهٔ پژوهش در ارتباط با موضوع، نتیجه‌گیری و توصیه‌ها و پیشنهادهای احتمالی.

۸. ۸ تشکر و قدردانی: قبل از منابع مورد استفاده ارائه شود و از ذکر عناوین دکتر و مهندس خودداری شود.

۹. نحوهٔ ارجاعات: منابع و مآخذ باید به صورت درون‌متنی و همچنین در پایان مقاله ذکر شود.

۹. ۱ ارجاعات در متن مقاله باید به شیوهٔ داخل پرانتز (APA) نسخه ۶ باشد؛ به گونه‌ای که ابتدا نام مؤلف یا مؤلفان، سال انتشار و صفحه ذکر شود. شایان ذکر است که ارجاع به کارهای چاپ شده فقط به زبان فارسی بوده و در اسامی لاتین معادل آن در زیر نویس همان صفحه ارائه شود. به عنوان نمونه: (شکوئی، ۱۳۸۷، ص. ۵۰) یا (وودز، ۲۰۰۵، ص. ۲۷).

۹. ۲ در پایان مقاله، منابع مورد استفاده در متن مقاله، به ترتیب الفبایِ نام خانوادگی نویسنده بر اساس الگوی فهرست نویسی APA تنظیم گردد.

نمونه فارسی:


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بسم الله الرحمن الرحيم

دانشکده ادبیات و علوم انسانی

# مجلّهٔ پژوهش و برنامه‌ریزی روستایی

**سال سیزدهم، شمارهٔ ٤، پاییز ١٤٠٣، شمارهٔ پیاپی ٤٧**

**صاحب امتیاز:** دانشگاه فردوسی مشهد
**مدیر مسئول:** دکتر حمید شایان
**سردبیر:** دکتر علی‌اکبر عنابستانی



**دستیار سردبیر:** مهدی جوانشیری
**مدیر اجرایی:** زهرا بنی‌اسد
**ویراستار انگلیسی:** مرکز ویراستاری ادبیات
**حروف‌نگاری و صفحه‌آرایی :** الهه تجویدی
**شمارگان:** ۵۰ نسخه

**نشانی:** مشهد، دانشگاه فردوسی مشهد، دانشکدهٔ ادبیّات و علوم انسانی دکتر علی شریعتی، کد پستی ۹۱۷۷۹۴۸۸۸۳ ، نمابر: ۳۸۷۹۶۸۴۰ (۰۵۱)
**بها:** داخل کشور: ۲۰۰۰۰۰ ریال (تک‌شماره) خارج کشور: ۲۵ دلار (آمریکا– سالانه)، ۲۰ دلار (سایر کشورها– سالانه)
درگاه الکترونیکی: http://jrrp.um.ac.ir/ E-mail:Rplanning@um.ac.ir

*** این مجله در جلسهٔ کمیسیون بررسی نشریات علمی کشور مورخ ۱۳۹۲/۲/۲۵ رتبهٔ علمی– پژوهشی دریافت و طی نامهٔ شمارهٔ ۳/۱۸/۳۵۷۲۸ در تاریخ ۱۳۹۲/۳/۱۳ ابلاغ گردیده است.**

**این مجلّه در پایگاه های زیر نمایه می‌شود:**
- **پایگاه استنادی علوم جهان اسلام (ISC)**
- **پایگاه اطلاعات علمی جهاد دانشگاهی (SID)**
- **پایگاه بانک اطلاعات نشریات کشور (Magiran)**
- **فهرست دسترسی آزاد مجلات (Doaj)**
- **Index Copernicus- RICeST- ISI-Noormags- Googlescholar- Civilica- Oaji**

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# مجله پژوهش و برنامه ریزی روستایی

سال سیزدهم، شماره ۴، پاییز ۱۴۰۳، شماره پیاپی ۴۷



شاپا: ۲۷۹۱-۲۷۸۳